

Chapter 2 What's New

Requirements §201.6(d)(3) and §201.7(d)(3): A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within 5 years in order to continue to be eligible for mitigation project grant funding.

The 2016 Placer County Local Hazard Mitigation Plan (LHMP) contained descriptions of their planning processes, the risk assessments of identified hazards for the Placer County Planning Area and mitigation strategies for reducing the risk and vulnerability from these hazards. Since approval of this Plan by FEMA, progress has been made by the County, the 5 incorporated communities, and 20 Special Districts on implementation of the 2016 mitigation strategies. As part of this LHMP Update, a thorough review and update of the 2016 County LHMP was conducted to ensure that this Plan Update reflects current community conditions and priorities in order to realign the updated mitigation strategy for the next five-year planning period. This section of this LHMP Update includes the following:

- **What's New in the Plan Update.** Section 2.1 provides an overview of the approach to updating the Plan and identifies new analyses, data and information included in this LHMP Update to reflect current community conditions. This includes a summary of new hazard and risk assessment data as it relates to the Placer County Planning Area as well as information on current and future development trends affecting community vulnerability and related issues. The actual updated data, discussions, and associated analyses are contained in their respected sections within this LHMP Update.
- **Summary of Significant Changes to Current Conditions and Hazard Mitigation Program Priorities.** Section 2.2 provides a summary of significant changes in current conditions, changes in vulnerability, and any resulting modifications to the community's mitigation program priorities.
- **2016 Mitigation Strategy Status and Successes.** Section 2.3.2 provides a description of the status of mitigation actions from the 2016 LHMP and also indicates whether a project is no longer relevant or is recommended for inclusion in the updated 2021 mitigation strategy. This section also highlights key mitigation success stories of the County and other participating jurisdictions since the 2016 LHMP.

This What's New section provides documentation of Placer County Planning Area's progress or changes in their risk and vulnerability to hazards and their overall hazard mitigation program. Completion of this LHMP Update further provides documentation of the Placer County communities' continued commitment and engagement in the mitigation planning process.

2.1 What's New in the Plan Update

This LHMP Update involved a comprehensive review and update of each section of the 2016 Plan and includes an assessment of the success of the participating communities in evaluating, monitoring, and implementing the mitigation strategy outlined in the 2016 LHMP. Only the information and data still valid from the 2016 LHMP was carried forward as applicable into this LHMP Update.

Also to be noted, Chapter 7 Implementation and Maintenance of this LHMP Update identifies key requirements for updating future plans:

- Consider changes in vulnerability due to action implementation;
- Document success stories where mitigation efforts have proven effective;
- Document areas where mitigation actions were not effective;
- Document any new hazards that may arise or were previously overlooked;
- Incorporate new data or studies on hazards and risks;
- Incorporate new capabilities or changes in capabilities;
- Incorporate growth and development-related changes to inventories; and
- Incorporate new action recommendations or changes in action prioritization.

These requirements and others as detailed throughout this Plan were addressed during this LHMP Update process.

As part of its comprehensive review and update of each section of the 2016 LHMP, Placer County and participating jurisdictions recognized that updated data, if available, would enhance the analysis presented in the risk assessment and utilized in the development of the updated mitigation strategy. Highlights of new data used for this LHMP Update is identified below in this section and is also sourced in context within Chapter 4, Risk Assessment. Specific data used is sourced throughout this LHMP Update. This new data and associated analysis provided valuable input for the development of the updated mitigation strategy presented in Chapter 5 of this LHMP Update.

Highlights of new information and analyses contained in this combined LHMP Update includes the following:

- Most hazards from the 2016 Plan were profiled in this LHMP Update. New hazards include localized climate change, pandemic, and tree mortality. Soil bank erosion was moved into the flood hazard. Hazards dropped from consideration include fog, subsidence, and hazardous materials transport.
- A new critical facility definition was created. The County created a new list of critical facilities that were spatially quantified in GIS, and then overlayed on each mapped hazard.
- Future development data was updated and collected from the County. This was spatially quantified in GIS, and then overlayed on each mapped hazard.
- Disaster declarations were updated, including federal, state, and USDA disaster declarations.
- The NCDC Storm Events and FEMA/Cal OES disaster declaration tables were updated.
- A new section on Power Shortage/Failure was added. Public Safety Power Shutoff events were also added.
- Cal-Adapt and Placer County Sustainability Plan data was added to the climate change section, as well as to other hazards that are exacerbated by climate change.
- New dam data provided by Cal OES was used for the dam inventory and analysis. This data included an updated hazard classification for identified dams and updated inundation mapping. Values at risk to dam inundation was analyzed. Critical facilities and populations at risk to dams were tabulated.
- An updated GIS analysis was performed for earthquake, including a Hazus earthquake run to show risk and provide potential loss estimates to the County from earthquake.

- An updated GIS analysis using the 2018 DFIRMs was performed for the flooding hazard for the 1%/0.2% annual chance floods, including values at risk, critical facilities at risk, population at risk, future development, and general community impacts.
- An updated GIS analysis was performed for landslides, including values at risk, critical facilities at risk, population at risk, future development, and general community impacts.
- More detailed GIS analysis was performed for the wildfire hazard, including values at risk, critical facilities at risk, population at risk, historic, cultural, and natural locations at risk, and general community impacts.
- An entire rework of the risk assessment for each identified hazard to reflect new information and to reflect the updated FEMA plan review tool. This included reworking the hazard profile and adding sections on location, extent, and new hazard event occurrences; redoing the entire vulnerability analysis to add additional items and updating the vulnerability assessment based on more recent hazard data as well as using the most current parcel and assessor data for the existing built environment to develop loss estimates.
- To better meet the revised FEMA plan review tool, a more extensive analysis of the extents to identified hazards was conducted and included in this LHMP Update.
- Utilizing updated critical facility GIS mapping for the Planning Area, an analysis was conducted to provide an updated inventory of critical facilities and those that fall within mapped hazard areas.
- An enhanced vulnerability assessment was conducted, which added a GIS analysis of updated future development areas in the Planning Area and specific to each of the mapped hazards.
- A greater study of County mitigation capabilities was added.
- Incorporation and analysis of the updated California Department of Finance population data was utilized for this LHMP Update.
- Environmental justice concerns were addressed in portions of this Plan Update.
- Also, as required by current FEMA planning guidance, an analysis of ongoing and continued compliance with the NFIP was included in this LHMP Update.

2.2 Summary of Significant Changes to Current Conditions, Planning Area Vulnerability, and Hazard Mitigation Priorities

This section provides a summary by hazard of significant changes in current conditions, Planning Area vulnerability, and any resulting modifications to the community's mitigation program priorities since the 2016 LHMP:

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Agricultural Pests and Disease			X

- Significant and pervasive drought conditions in the County continue to stress the agricultural crops and adversely affecting the agricultural industry in the County.
- Recent drought conditions stressed crops making them more susceptible to insect infestation
- Reduced water supply resulted in land being left out of production reducing overall crop yields

- Noxious weeds are more drought tolerant – better able to compete for water over local crops
- Drought increased the tree mortality in the County further impacting the timber industry. Timber is the #2 Ag product in the County.
- In addition, there is a lack of infrastructure, such as timber mills, online to process product.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Avalanche		X	

- The avalanche conditions in the County are dynamic and change from season to season and often from day to day resulting in ever changing increases and decreases in vulnerability.
- Different avalanche mitigation techniques, such as propane-based Gaz-Ex that can be used remotely, are being used in areas near highways, such as Alpine Meadows, that have been effective in reducing the risk and impacts to roads and infrastructure.
- More people recreating in back county areas will increase the number of people at risk to a back county avalanche

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Climate Change			X

- Climate change was not addressed in 2016. Regardless, the effects of climate change are becoming more apparent in the Placer County Planning Area and all of California.
- NWS data indicates temperatures are increasing resulting in more extreme heat days. 2020 temperatures were some of the hottest.
- Weather extremes, including precipitation have become much more variable – the Planning Area is seeing increased precipitation and intensity as well as abnormally dry conditions.
- Data also suggests that changing climate conditions influence the severity of multiple hazards, such as heat, flooding, wildfire, drought, and others, identified in Placer County.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Dam Failure			X

- With more people moving into dam inundation areas, the vulnerability increases due to an increase in potentially affected populations. Also, with more varied precipitation occurring in the County, this hazard will continue to change.
- Risk increases over years due to aging dam infrastructure. This was evident by the 2017 Oroville spillway incidence.
- Non-jurisdictional dams pose the biggest risk and, over time with little regular maintenance and often located in remote areas with little security, result in an increase in vulnerability to Placer.

- With newer regulations, other dams are now required to do inundation mapping, develop EAPs, and conduct exercises which helps mitigate the risk.
- Post fire conditions create excess debris and sediment issues which can affect the functionality of area dams. In fact, various water supply districts such as PCWA and NID have been incurring costs associated with monitoring and debris removal around area dams and waterways. Thus there is a potential increase in vulnerability with heavy storms in wildfire burn scar areas.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Drought and Water Shortage			X

- Drought conditions since the 2016 LHMP, including water supply issues such as a diminished water table, have had an impact on the Placer County Planning Area and California. As a result, the drought hazard continues to be a significant priority for mitigation planning.
- Recent drought conditions have contributed to an increase in dry fuels (and tree mortality), and general increase in wildfire conditions.
- Given the cumulative effects of drought since the 2016 Plan, drought continues to have a significant economic impact on recreation in the County. With Lake Tahoe and rivers running substantially lower, less people have been vacationing and undertaking water dependent recreational activities, such as boating, rafting, etc.
- Water quality concerns are exacerbated in drought conditions.
- Drought conditions are depleting smaller high county reservoirs taking some water sources out of use making firefighting more difficult.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Earthquake		X	

- Overall, Placer County is in a relatively low to moderate seismically active area.
- The Eastern side of the County continues to experience an increase in earthquake occurrences over the last several years.
- The primary factor that might change the earthquake vulnerability is additional development and more people moving to the area. However, adherence to current California building codes should ensure sound development in new development areas.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Flood: 1%/0.2% events		X	

- The risk and vulnerability of 1% and 0.2% flood events remain somewhat constant, changing from year to year based on weather, location, and new development in the Planning Area.
- With the winter storms of 2017- 2019, heavy rains resulted in full reservoirs and high rivers. This contributed to flooding around the County, including within identified FEMA floodplains.

- Effective land use planning and requirements for development in identified floodplains have minimized additional exposure to this hazard in the County. Participation in the NFIP CRS program also helps manage floodplains in the County thus reducing flood vulnerability to County residents.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Flood: Localized Stormwater Flooding			X

- Climate change issues may result in more localized flooding as the climate warms and more frequent, wetter, and greater intensity storms create more runoff.
- 2017-2019 winter storms, including significant, greater intensity rains, resulted in more localized flooding throughout the Planning Area.
- Outdated and aging drainage infrastructure also contributes to a greater vulnerability to localized, stormwater flooding.
- Recent drought conditions in some areas have hardened soils and predisposed areas to worse flooding.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Landslide, Mudslide, and Debris Flows			X

- Over the last several years of severe drought, much of the vegetation along slopes areas is failing to thrive, thus there is a lack of vegetation to hold soil contributing to the landslide/mudslide potential.
- Post fire conditions have left areas more susceptible to landslides and debris flows, especially with the heavy storms associated with El Nino winters.
- Even outside of post-fire areas, recent wet storms in 2017-2019 have increased the incidents of landslides and road closures.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Levee Failure		X	

- There are limited areas outside of Roseville that are affected by levees, thus this hazard has seen little change.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Pandemic		X	

- Pandemic is a new hazard to the 2021 LHMP Update.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Seiche (Lake Tsunami)		X	

- The vulnerability of this hazard is primarily affected by changes in development to lakefront properties. There has been little new development in these areas; most changes are the result of redevelopment which has not effectively changed the vulnerability of this hazard.
- Recent seismic activity continues which contributes to the risk of this hazard.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Severe Weather: Extreme Heat			X

- There has been an increase in severe heat days in recent years. This last year (2020) was one of the hottest on record.
- Climate change issues will continue to increase heat related impacts.
- The heat, combined with drought conditions, has increased the potential for wildfires.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Severe Weather: Freeze and Snow		X	

- Similar to other weather hazards, the overall vulnerability of the Planning Area changes from year to year depending on the season.
- Freeze events continue to occur in the County impacting area crops.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Severe Weather: Heavy Rains and Storms (Hail, Lightning)		X	

- Similar to other weather hazards, the overall vulnerability of the Planning Area changes from year to year depending on the season. the heavy rains and storms of 2017-2019 had been significant, causing flooding and other adverse impacts to the County. 2020 experienced dryer weather overall.
- Climate change brings renewed concern moving forward for heavy and more intense rains, storms and associated issues to the County.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Severe Weather: High Winds and Tornadoes			X

- Similar to other weather hazards, the overall vulnerability of the Planning Area changes from year to year depending on the season.
- High winds exacerbate the spread and intensity of wildfires.
- High winds in recent years have contributed to the potential for a PSPS event to occur in the County.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Tree Mortality			X

- Drought conditions increase the tree mortality in the County.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Wildfire			X

- Compounded by current drought conditions, the wildfire hazard has substantially increased and is no longer just a seasonal issue. The wildfire season, including the potential for a catastrophic wildfire, is now a year around concern.
- The vulnerability of Placer County to increased occurrence of a devastating wildfire has increased as exacerbated by the recent drought, increases in tree mortality, and overall increase in wildfire conditions.
- The increased development in WUI areas within the County also contributes to an increase in vulnerability.
- Climate change continues to affect the nature and intensity of wildfires.
- Wind has been a major contributor to the potential for a catastrophic wildfire. And when combined with extreme heat, also can trigger a PSPS which leaves the community at risk in other ways.
- With large wildfires occurring throughout California, the Planning Area has seen a significant change in air quality from smoke resulting in more recorded bad air days.
- Catastrophic wildfires in northern California counties have created other issues in the County, as evacuees flee the fires and look to nearby communities for temporary housing.

2.3 2016 LHMP Mitigation Strategy Successes and Status

Placer County and participating jurisdictions have been successful in implementing actions identified in the 2016 Placer County LHMP Mitigation Strategies, thus, working diligently towards meeting their 2016 goals and objectives of:

Goal 1: Minimize risk and vulnerability of Placer County to the impacts of natural hazards and protect lives and reduce damages and losses to property, economy, public health and safety, and the environment.

- Minimize economic and resource impacts and promote long-term viability and sustainability of County resources
- Minimize impacts to both existing and future development from all hazards (through well-planned communities)
- Minimize impacts to natural and cultural resources
- Minimize impacts from climate change
- Minimize impacts to watersheds/Promote watershed health
- Prevent and reduce wildland fire risk and related losses
- Prevent and reduce flood risk and related damages, with a focus on repetitive loss structures and infrastructure

Goal 2: Provide protection for critical facilities, infrastructure, utilities and services from hazard impacts.

- Provide protection for critical infrastructure from the wildland fires, floods, and severe storms/weather (e.g., repeaters, cell towers, water tanks, utilities)
- Improve infrastructure/system reliability for critical lifeline utilities, including stormwater systems, roadways (evacuation routes, emergency services and supplies); rail lines, and pipelines.
- Minimize risk of loss of life and injury to At-risk Populations

Goal 3: Improve public awareness, education, and preparedness for all hazards.

- Enhance public outreach, education, and preparedness program to include all hazards of concern (e.g. fire restrictions, water conservation measures, hazardous vegetation, air and water quality issues)
- Increase public knowledge of the risk and vulnerability to identified hazards and their recommended responses to disaster events to reduce losses
- Educate general public on evacuation planning and sheltering options for all hazard types and to encompass all groups (e.g., residents, visitors, second homeowners, vulnerable populations, animals)
- Increase community awareness and participation in hazard mitigation activities to include defensible space, hazardous vegetation abatement projects, and forest management projects and practices to reduce flood risk on private property
- Utilize multiple public outreach avenues such as schools, new technologies, and social media
- Coordination with other regional jurisdictions to facilitate (consistent/coordinated) public information function prior to, during and after an event (e.g., Facebook, Twitter, Everbridge, web, tv, radio)

Goal 4: Increase communities' capabilities to mitigate losses and to be prepared for, respond to, and recover from a disaster event.

- Continued enhancements to Emergency Services capabilities integrating new technologies to reduce losses and save lives
- Improve interagency (local, state, federal) emergency coordination, planning, training, exercising, and communication to ensure effective community preparedness, response and recovery
- Improve interagency coordination with respect to implementation of mitigation activities such as fuels reduction and other multi-jurisdictional wildland fire projects
- Enhance the use of shared resources/Develop a strong mutual aid support system
- Maintain current service levels/provide for enhanced service levels

- Increase first responder’s awareness of vulnerable populations and other priority needs during a hazard event;(use of technology to pre-identify and communicate)
- Utilize lessons learned (debriefing) to improve response capabilities
- Promote efficient recovery from incidents to minimize impacts to lives, environment, and economy

Goal 5: Maintain FEMA Eligibility/Position the communities for grant funding.

- Continued compliance with the NFIP/enhancement of floodplain management program through participation in the NFIP’s Community Rating System (CRS) where feasible.

2.3.1. Success Stories

Hazardous Tree Removal

Placer County has removed 5,200 trees threatening county infrastructure, marking the completion of its hazardous tree removal project.

In 2015, then Governor Edmund G. Brown Jr. proclaimed a state of emergency due to the extreme hazard of dead and dying trees throughout the state resulting from years of drought and bark beetle damage. Placer County was among the 10 counties most affected. Dead trees falling into county roadways pose a high risk to motorists. They could also inhibit emergency response and evacuations.

In response, the Board of Supervisors approved the Hazardous Tree Removal Plan, which outlined the steps needed to address the identification and removal of drought-related hazardous trees that threaten county roads and infrastructure. Under the proclamation of a state of emergency, the governor authorized California Disaster Assistance Act funds to support those most-impacted counties by reimbursing up to 75% of costs to remove eligible hazardous trees under the county’s plan.

The tree removal program was a multi-agency, multi-jurisdictional effort. Partners from state and federal agencies, such as Caltrans, CAL FIRE, the U.S. Forest Service and the Bureau of Land Management, as well as private landowners, worked together to identify hazardous trees and get them removed.

Placer County Partnerships (various)

Placer County has engaged in multiple partnerships, as shown below:



Whether it is discussing the increasing cost of fire insurance, forest health, preparation and planning, or protecting county resources, everyone has a part in the conversation. Partnerships and coordination are critical to ensuring Placer County is prepared.

Coordinating with local and state partners to prepare for wildfire

Preparing for wildfire takes all forms in Placer County. CAL FIRE Nevada-Yuba-Placer Unit / Placer County Fire Department, local fire districts, federal fire partners, cities, fire safe communities and Placer County all work toward creating and maintaining defensible space around homes and infrastructure, regional fuel breaks, fire education campaigns and more. One example is CAL FIRE's recently completed North Fork American River Shaded Fuel Break. The project is designed to protect the residents of Placer County and help safeguard over 5,500 structures and critical infrastructure such as the Union Pacific Rail Line, Interstate 80, the Kinder Morgan Petroleum Pipeline, and Pacific Gas and Electric power and water infrastructure that serves approximately 500,000 customers.



Working together on forest restoration and water conservation



The French Meadows Project is a forest restoration and fuels reduction project located in the headwaters of the Middle Fork American River in the Tahoe National Forest. It is an extensive public-private partnership of numerous regional and federal partners - all working together to not only improve the health and resilience of a vital municipal watershed, but also to address critical barriers to increasing the pace and scale of forest restoration in the Sierra.

The Middle Fork Project is a multi-purpose water supply and hydro-generation project designed to conserve and control waters of the Middle Fork American River, the Rubicon River, and several associated tributary streams.

Combining efforts to reduce wildfire risk



Placer County partners with the Placer Resource Conservation District on multiple programs, one being the low-cost Chipper Program to help homeowners improve their defensible space.



Placer County Parks Division's goat grazing program is an environmentally friendly option for open space management and fire risk reduction.



The Placer County Office of Emergency Services runs the Tree Mortality program in coordination with the Public Works Department to remove dead or dying trees on county land.



Placer County Environmental Utilities Division's green waste recycling program helps residents reach their defensible space goals.

Placer County Firewise Communities

Placer County has one of the largest networks of Firewise USA communities in the state

Our county residents provide the most valuable opportunity for developing effective partnerships. The Placer County Fire Safe Alliance is made up of federal, state and local agencies and community partners, who support residents' preparedness efforts through Firewise Communities and Fire Safe Councils.

Visit placer.ca.gov/FiresafeAlliance or call (530) 886-5300 to get involved.



62
OFFICIAL
FIREWISE
COMMUNITIES

In 2020, Firesafe Community members



Completed **70,000** community service hours equaling **\$1,601,416**



Hosted **69** virtual educational meetings and **9** fire safe events



Invested **4,034,578** in Firewise Home improvements, received **\$1,351,073** of grant funding, and contributed to **\$6,987,067** of wildfire risk reduction investment



Cleared **152,261** cubic yards of potentially flammable debris throughout the county



Preparedness starts at home

The Placer Alert public notification system, operated by the Placer County Sheriff's Office, is vital for informing residents during an emergency. Be prepared and sign up for notifications at PlacerAlert.org.

Visit ReadyPlacer.org to learn more about what the county is doing and what you can do to ensure you are prepared. Put together emergency supply kits in an easy-to-carry "go bag" so you're ready to go at a moment's notice in the event of a wildfire or other disaster.

PlacerAlert

✓ReadyPlacer

Placer County Administrative Building Generator Project

This project was initiated in 2018 to upgrade the electrical distribution system for back-up power at the Placer County Administrative Building (Customs House), located at 775 North Lake Blvd., Tahoe City, CA. A grant application was approved in 2014 for a portable generator and limited electrical upgrades. The original scope of work entails rewiring the feeder lines to three subpanels on the first floor, and purchasing a trailer mounted generator to be delivered to the site in an emergency, when needed during emergencies or loss of electrical power for extended period of time. The generator can then be plugged into a new tap box installed in the parking lot landscape island and connected to a manual throw switch that will provide electrical power to the forward EOC and supporting spaces located on the first floor of this facility during emergencies if power is lost. The generator is a 100KW type (AEL # 10PE-00-PTSW (genset) and 10GE-00-GENR (generator).

On August 14, 2018, the Placer County Board of Supervisors (BOS) approved Plans & Specifications and authorized the Director of Public Works and Facilities, or designee, to award and execute a construction contract not-to-exceed \$342,500. On January 18, 2018, a contract was executed with ABM Electrical & Lighting Solutions, Inc. in the amount of \$283,488. However, elevator work was also necessary and not in ABM's scope of work. A second contract was issued to Elevator Industries for \$20,223.33, bringing the total contracted project cost to \$303,711.51.

This new scope of work utilized the existing 100kW portable generator to power the entire building (1st and 2nd floors) while modifying the building electrical system to consolidate all building loads on the Generator circuit.

Miners Ravine Sewer Pipeline Repair

An abutment holding a sewage pipeline over Miners Ravine was severely eroded and structurally compromised. The abutment was likely to fail during higher creek flows, which would cause the pipe to rupture and spill sewage into Miners Ravine. The abutment was successfully replaced with a sound structure. A potential sewage spill was avoided and the habitat for threatened species was protected. This can be seen in Figure 2-1. Placer County Environmental Utilities was responsible for this project.

Figure 2-1 Miners Ravine Before and After



Source: Placer County Environmental Utilities

North Tahoe Public Utility District Generator

The North Tahoe Public Utility District installed an emergency generator for our Base Administration building and connected two additional buildings and fuel pumps to the new generator utilizing two FEMA HMGP grants. With these projects, we can maintain power at our corporation yard to keep critical water and sewer equipment functioning during power outages.

Figure 2-2 North Tahoe Public Utility District Generator



Source: North Tahoe Public Utility District installed

Tahoe City Public Utility District Water Tank Replacement

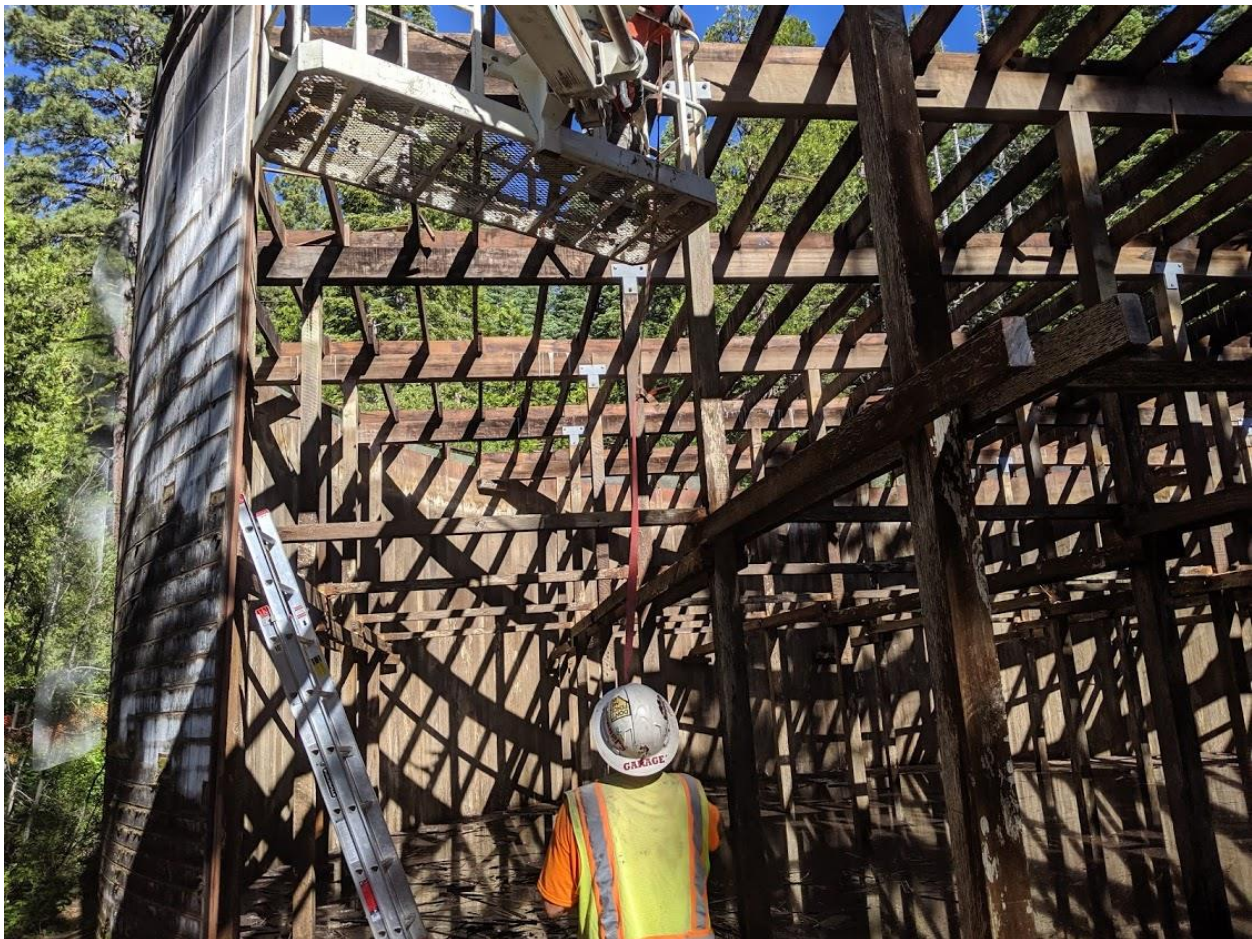
The Bunker Water Tank Replacement project was completed in 2019. The nominal capacity of the tank was increased from 500,000 gallons to 1.2 million gallons providing much needed emergency storage and reduces risk by providing longer sustained fire flow capacity for areas served by the tank. An increase in nominal capacity of 700,000 gallons provides an additional six hours of reliable gravity based fire flow capacity at a fire flow demand of 2,000 gallons per minute. In addition, the existing tank was constructed of redwood and was seismically unstable. The new tank is constructed of steel and meets all current seismic codes. The change from redwood to steel greatly reduces risk of damage due to wildfire due to the previous flammable material construction and reduces earthquake risks due to the seismic deficiencies of redwood tank construction. The Bunker Water Tank will provide at least 50 years of risk mitigation to the residents, businesses, visitors and the environment served by it. Pictures can be seen in Figure 2-3 and Figure 2-4.

Figure 2-3 Bunker Water Tank



Source: Tahoe City Public Utility District

Figure 2-4 Bunker Water Tank



Source: Tahoe City Public Utility District

North Tahoe Fire Protection District

The District noted the following successes:

- North Tahoe Fire Protection District Interoperability Radio Upgrades – \$450,000 was spent with grant, capital improvement and general fund dollars to replace all base, mobile and portable radios. These radios were upgraded to meet 2018 FCC guidelines and DOHS SAFECOM 6 Levels of Interoperability. These radios also meet CALFIRE/CalOES standards and specifications which assists with interoperability during in-district and out of districts assignments. North Tahoe Fire also spends approximately \$145,000 annually for Grass Valley ECC Dispatch Services, and \$50,000 annually for communications general fund budget for radio repair, replacement, and maintenance. Communications is a crucial component of all risk emergency response to ensure timely dispatch and effective communication during an incident and with incoming resources from varying agencies.
- North Tahoe Fire Protection District GIS Improvements – A GIS specific laptop with ArcGIS license were purchased with general fund dollars. Incident view updates and Hydrant mapping GIS were improved. The improvements made to emergency response by enhancing our mapping has been instrumental in improving emergency response.
- North Tahoe Fire Protection District Facility Improvements – Replacement and maintenance of existing station infrastructure have been hampered by the ability to fund these cost prohibitive improvements. The District was able to complete an extensive interior remodel of our Homewood Station that was completed December of 2019.
- North Tahoe Fire Protection District Defensible Space Education – North Tahoe Fire Protection District secured \$1.3 Million in grant funding as a part of the Tahoe Network of Fire Adapted Communities and \$623,079 was spent since award in 2016. This project is ongoing and the current grant period of performance extends through 2023. Since 2016 NTFPD has coordinated the creation of 6 Firewise Communities, completed over 7,000 Defensible Space Inspections, received and completed over 3,800 chipping requests, assisted with tree removal permitting, and continued to conduct a robust outreach and education program to provide materials, and coordinate community events and workdays.

2.3.2. 2016 Mitigation Strategy Update

The 2016 Placer County LHMP mitigation strategy contained 165 separate mitigation actions for the County and participating jurisdictions. Of the 165 actions, 15 have been completed, 17 are completed but ongoing, 72 are ongoing, 4 are ongoing with portions not started, and 57 have not been started. 96 2016 Placer County actions have been identified for inclusion in this LHMP Update, and are carried forward in Chapter 5 in Table 5-4. Table 2-1 provides a status summary of the mitigation action projects from the 2016 Placer County LHMP. Following the table is a description of the status of each project.

Table 2-1 Placer County's 2016 LHMP Update: Mitigation Action Status Summary

Action Title	Complete	Ongoing	Not Yet Started	In 2021 Plan Update
Placer County				
Multi-Hazard Actions				

Action Title	Complete	Ongoing	Not Yet Started	In 2021 Plan Update
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	X	X		Y
Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness		X		Y
Trail System Way Finding and Directional Signage		X		Y
Disaster Debris Management Plan		X		N
Agricultural Actions				
Pest Detection Programs		X		N
Noxious Weed Eradication Programs		X		N
Dam Failure Actions				
Cottonwood Dam Restoration			X	N
Drought Actions				
Retrofit of High Water Use Landscape & Irrigation		X		N
Drought Public Education and Outreach		X		N
Erosion Actions				
Bear Creek Bank Restoration	X			N
Lake Tahoe Basin Environmental Improvement Program (EIP)		X		N
Earthquake Actions				
Fire Station Seismic Upgrade			X	N
Dewitt Demolition		X		N
Health Care Facility Seismic Resiliency			X	N
Flood Actions				
Community Rating System (CRS) Maintain and Enhance		X		Y
Stream Channel Clearing – Western Placer County		X		N
Van Norden Dam Lowering and Meadow Restoration	X	X		N
Miners Ravine Sewer Pipeline Repair	X			N
Sewer System Management Plan Updates		X		N
Stormwater Drainage Improvements		X		N
Bridge and Culvert replacement and drainage improvements		X		Y
Urban Level of Flood Protection Mapping		X		N
Elevate Remaining 95 Homes in the Dry Creek Watershed			X	Y
Elevate Repetitive Loss Structures in 100-year Floodplain			X	Y
Hazardous Material Actions				
Natural Hazard Minimization Evaluation focusing on top 5 facilities in Placer County producing large quantities of hazardous waste/storage of such hazardous materials		X		N
Wildfire Actions				
Large Strategic Fuel Break		X		Y

Action Title	Complete	Ongoing	Not Yet Started	In 2021 Plan Update
Fuel Breaks in the Wildland Urban Interface (WUI)	X	X		Y
Wildfire Public Education		X		Y
Natural Systems Protection / Education and Awareness Programs – Placer County Wildland Urban Interface (WUI) Strategic Planning		X		Y
North Fork American River Fuel Break	X	X		Y
Defensible Space Programs		X		Y
Projects that focus on Open Space/Defensible Space		X		Y
Annual Multi-Agency Wildland Fire Drill	X	X		Y
Vegetation Management – Ongoing Maintenance of Fuel Breaks		X		Y
City of Auburn				
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan		X		Y
Lincoln Basin (Downtown) Drainage Infrastructure			X	N
Creek and Stream Cleaning and Maintenance Program		X		N
Implementation of Storm Water Treatment Plan			X	N
Electric Street Diversion Project		X		N
Old Town Auburn Storm Drain System		X		N
American River Canyon Shaded Fuel Break		X		N
Community Education on Wildfire		X		N
Residential Home Inspections for Compliance of Fire Safe Standards; Defensible Space.		X		N
Maintenance of the Private Lands Portion of the Shaded Fuel Break Along the Rim of the American River Canyon and the Auburn State Recreation Area (ASRA)				N
City of Colfax				
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan		X		Y
Continue Annual Weed Abatement Ordinance		X		Y
Colfax Schools Evacuation Site Shaded Fuel Break	X	X		Y
Evaluate the Need and Feasibility of Improving Fire Prevention for the Historic Business District		X		Y
City of Lincoln				
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	X			Y
Lincoln Boulevard: Auburn Ravine Bridge – Reconstruct Bridge			X	Y
McBean Park Drive: Auburn Ravine Bridge – Additional 110' Span		X		Y
Lakeview Farms Regional Volumetric Mitigation Facility		X		Y

Action Title	Complete	Ongoing	Not Yet Started	In 2021 Plan Update
Gladding Parkway, Lincoln Boulevard, McCourtney Road – Stream Restoration And Culvert Improvement			X	Y
"O" Street Drainage Improvements			X	Y
7th Street Drainage Improvements			X	Y
Auburn Ravine at State Route 193 Bridge		X		Y
Auburn Ravine at State Route 65 Bridge			X	Y
Ingram Slough – Orchard Creek Return Channel			X	Y
Markham Ravine – Updated FEMA Analysis And Mapping		X		Y
Markham Ravine Drainage Improvements – Union Pacific Railroad & State Route 65 Crossings			X	Y
Auburn Ravine Stream Restoration Projects (Analysis and Repairs)		X		Y
Markham Ravine Streambed Restoration Projects (Analysis Only)			X	Y
Coon Creek Streambed Restoration Projects (Analysis Only)			X	Y
Fire Prevention and Fuels Management Plan			X	Y
City of Rocklin				
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	X			Y
Federal Emergency Management Agency (FEMA) Floodplain/Community Rating System (CRS)			X	N
Creek Channel and Drainage Way Clearing and Maintenance		X		Y
High Water Use Landscape and Irrigation Retrofit	X			N
Open Space Fire Prevention & Vegetation Management Prescribed Grazing		X		Y
GIS Based Mapping of Pertinent Information that can be used by All Agencies in the Development of Plans and During Emergency Incidents		X		Y
Town of Loomis				
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan		X		Y
Local Bridges Evaluation Program			X	Y
Address signage for property addresses		X		Y
Delmar Avenue Headwall Reconstruction Project			X	Y
Creek Maintenance Secret Ravine & Antelope Creek		X		N
Reconstruction of Brace Bridge at Secret Ravine			X	Y
Raise Flood-Prone Houses Along Loomis Creeks			X	N
Alta Fire Protection District				
Apparatus Water Fill & Drafting Location Improvements			X	Y
Evacuation / Reunification Center Improvements		X	X	Y

Action Title	Complete	Ongoing	Not Yet Started	In 2021 Plan Update
Natural Systems Protection / Education and Awareness Programs and Community Fuel Breaks		X	X	Y
Natural Systems Protection / Education and Awareness Programs		X	X	Y
Emergency Communications and Information System Improvements.		X	X	Y
Alta Fire Protection District CERT Team	X			N
Reflective Addressing		X		Y
Alpine Springs County Water District				
Emergency Electrical Generator Replacement Project			X	Y
Water Storage Tank Replacement Project			X	Y
Mineral Springs Soil Bank Stabilization Project			X	Y
Alpine Meadows Consolidated Defensible Space Continuation Project			X	Y
Foresthills Fire Protection District				
Completion of Fuels Management Projects within the Foresthill/Iowa Hill Fire Safe Council, Greater Auburn Area Fire Safe Council and Placer Sierra Fire Safe Council Areas of the Western Slope of Placer County.		X		N
Foresthill Biomass Project			X	N
Assess and Enhance Foresthill Fire Protection District (FFPD) New Subdivision, Hazard Fuels Clearing and Maintenance Ordinance. Put Programs in Place with Homeowners Associations in CC&R's and Maintenance Contracts.		X		N
Todd Valley Shaded Fuel Break		X		N
Completion of Fuels Management Projects within the Foresthill/Iowa Hill Fire Safe Council, Greater Auburn Area Fire Safe Council and Placer Sierra Fire Safe Council Areas of the Western Slope of Placer County.		X		N
Loomis Fire Protection District				
Identify and inspect ALL bridges in LFPD			X	N
Vegetation Management for Open Areas			X	N
Address Signs for Rural Residences			X	N
Adopt 2016 CFC, CBC, and local standards			X	N
Nevada Irrigation District				
Combie Phase 1 Replacement		X		Y
Centennial Water Storage and Power Supply Project		X		Y
Water Service Auburn Valley CSD			X	Y
NID Headquarters Office Generator	X			N
Orr Creek Diversion		X		Y
Reservoir Cleaning		X		Y

Action Title	Complete	Ongoing	Not Yet Started	In 2021 Plan Update
Canal Culvert Replacement Program		X		Y
Northstar Community Services District				
Martis Landing Drainage Swales and Catch Basins	X			N
Continue Easement Access Road Water Bar Maintenance and Replacement Program		X		N
Fuels Reduction @ Sawmill Reservoir		X		N
Fuels Reduction Program		X		N
Storm Water Drainage Inlet Maintenance		X		N
Siphon Line		X		N
Provide Power from Mobile Generator		X		N
Green Waste Recycling Program		X		N
Enhance our current Defensible Space Program by seeking funding to hire a part-time employee to assist the Fire Prevention department in running this program	X			N
District Water Conservation Program	X			N
North Tahoe Fire Protection District				
FCC P-25 Interoperability Radio Systems		X		Y
District GIS Technology, Equipment, Database and Mapping Improvements		X		Y
North Tahoe Fire Protection District Critical Facility Infrastructure Improvements		X		Y
Seiche Wave Warning Systems, Signs and Public Education			X	N
Defensible Space Inspection, Tree Marking, Chipping Program, and Public Education		X		Y
Hazardous Wood Roof Replacement Program			X	N
Regional Water System Fire Protection Upgrades and Interoperability			X	Y
Skid Steer Loader with Transport Trailer, Fuels Reduction Masticator Attachment and Snow Blower Attachment			X	Y
Hydrant Risers, Replacements and Markers		X		Y
North Tahoe Public Utility District				
Update SCADA Equipment and Telecommunications Infrastructure	X			N
IT and Telecommunications Improvements for Disaster Preparedness			X	Y
Update Emergency Response Plan			X	N
Backup Generator Installation at Critical Facilities		X		Y
Fuels Reduction around Critical Infrastructure and North Tahoe Regional Park		X		Y
Kingswood West Subdivision Emergency Evacuation Access			X	N

Action Title	Complete	Ongoing	Not Yet Started	In 2021 Plan Update
North Tahoe Regional Park Road Improvements for Emergency Access			X	Y
Seismic Study and Retrofit of Critical Infrastructure			X	Y
Sewer Main Replacements in Shorezone of Lake Tahoe			X	Y
Water Booster Pump Station Rehabilitation/Replacement			X	Y
Increased Storage Capacity for Dollar Cove Water System			X	Y
Water System Interties			X	Y
Placer County Flood Control District				
FEMA CTP DFIRM Mapping Study	X	X		Y
Pursue Regional Detention and Retention Projects within the Dry Creek and Cross Canal Watersheds	X	X		Y
Update Hydrology and Hydraulic Models within the Cross Canal Watershed			X	Y
Upgrade of Flood Warning System to Include Additional Gage Locations and Flood Forecasting Capabilities	X	X		Y
Placer County Water Agency				
Hillside Slope Stabilization	X	X		Y
L.L. Anderson Dam Spill Way Modification	X	X		N
Water System Interties	X	X		N
Vegetation Management and Brushing	X	X		Y
Enhance Canals by Converting Earthen Canals to Gunite-Lined Canals in Critical Areas	X	X		Y
Replace Wooden Flume Structures	X	X		Y
De-Silt Reservoirs.			X	Y
Placer Hills Fire Protection District				
Assess And Enhance Placer Hills Fire Protection District (PHFPD) Onsite Water Requirements For Minor Lot Splits	X			N
South Placer Fire Protection District				
Vegetation Management for Open Areas		X		Y
Address Signs for Rural Residences		X		N
Adopt 2016 CFC, CBC, and local standards	X			N
Squaw Valley Public Service District				
Emergency Water Supply Interconnection to Martis Valley			X	Y
Truckee River Siphon	X			N
Squaw Creek Siphon			X	Y
Easement Abatement/Maintenance of Emergency Access		X		Y

Action Title	Complete	Ongoing	Not Yet Started	In 2021 Plan Update
Develop a Community-Wide Emergency Notification System Capable of Providing Information to Both Residents and Visitors by Utilizing Permanent, Roadside Changeable Message Boards and a Low-Power Radio Transmitter			X	Y
SVPSD/Mutual Water Company Inter-tie			X	Y
Water Tank Earthquake Retrofit Project			X	Y
Tahoe City Public Utility District				
Bunker Water Tank Replacement	X			N
West Lake Tahoe Regional Water Treatment Plant		X		Y
Tahoe Main Emergency Water Supply			X	N
Tahoe Truckee Unified School District				
North Tahoe High School and Middle School, Tahoe Lake Elementary School Emergency Generators.			X	N
School Site and Community Education of Procedures Related to Safety and Emergency Situations. Improvement of District Wide Emergency Communication and Alert Systems.			X	N
HVAC Control Upgrades			X	N
Truckee Fire Protection District				
Community Wildfire Protection Plan	X	X		Y
Severe Winter Weather and Propane Issues Mainly in Serene Lakes		X		N

Placer County Mitigation Actions

Multi-Hazard Actions

Integrate Local Hazard Mitigation Plan into Safety Element of General Plan

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The 2016 LHMP was incorporated by reference into the Safety Element of the General Plan in 2016. The integration contributed to reduce risks as the LHMP was used as a reference source document for the Placer County Sustainability Plan as well as other plans/planning processes done by the County.

Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Placer County OES conducts public education and awareness of natural hazards and public understanding of disaster preparedness efforts throughout the year through posting of current information on the County website and social media platforms. Additionally, Placer County OES also participate in the annual National Preparedness Month in September. The County developed the “Ready Placer” website and public education campaign which promotes individual and family preparedness.

Trail System Way Finding and Directional Signage

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing. It is being carried forward in this Plan Update.

Disaster Debris Management Plan

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The draft Debris Management Plan was submitted to CalOES for review in 2019 under FEMA Alternative Procedures Pilot Program, however FEMA suspended the program in 2020. The draft DMP was resubmitted in February 2021 to CalOES for review, which is currently in progress.

Agricultural Actions

Pest Detection Programs

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Agriculture and US Department of Agriculture to conduct a comprehensive pest detection program for a variety of specific insect species determined to be highly-detrimental to agriculture and the environment (including urban and rural landscapes). Should one of these pests become established in Placer County, specific protocols would be followed to delimit the

extent of the infestation, and then implement a treatment and monitoring plan to mitigate the infestation. This plan is in place.

Noxious Weed Eradication Programs

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Placer County Agriculture Department conducts annual surveys and treatments to find and eradicate specific noxious weeds that if established would be detrimental to agriculture and the environment. This program is fully operational.

Dam Failure Actions

Cottonwood Dam Restoration

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project has not been implemented. District staff continues to seek funding opportunities and coordinate with project stakeholders to pursue implementation.

Drought Actions

Retrofit of High Water Use Landscape & Irrigation

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing as landscape is replaced.

Drought Public Education and Outreach

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): In 2016 there were Drought Emergency Water Conservation regulations that restricted the use of water. Education and outreach material was provided to the community to inform customers of restrictions (no washing sidewalks/driveways; no runoff allowed; shut off nozzle must be used for washing vehicles; fountains must have recirculating system; limit irrigation; etc.). Continued education and outreach will be conducted, as needed, in drought years.

Erosion Actions

Bear Creek Bank Restoration

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): 30 acres of mountain meadow and 3,000 ft of stream restored – by restoring streams to their natural channels, we allow the meadow to once again ‘hold water’—a natural function of a healthy meadow. Improving water quality and aquatic habitat - when functioning, this meadow can filter as much as 60% of the sediment as water flows through, making the water downstream more fishable, drinkable, and swimmable. Enhance meadow hydrology and habitat - by slowing erosion and preventing soil loss, we are encouraging the development of mature soils. This supports

more diverse vegetation to restore the meadow's ability to sustain life. A portion of Bear Creek began flood plain restoration activities in 2020. The 'bank' area has not been addressed yet, but should start in 2021 or 2022.

Lake Tahoe Basin Environmental Improvement Program (EIP)

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This is an ongoing effort to reduce sediment discharge to Lake Tahoe. Over 40 erosion control projects have been completed in the Placer County portion of the Lake Tahoe Basin since the 1980s. Five more projects to address erosion and stormwater quality are scheduled over the next 10 years

Earthquake Actions

Fire Station Seismic Upgrade

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): There is no plan at this time to seismically upgrade the County's fire stations. The County is in one of the lowest risk regions for earthquake damage.

Dewitt Demolition

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): As of February 16, 2021, demolition of most of the unoccupied buildings dating back to World War II are being demolished, in accordance with the County's PCGC Master Plan Update. The project is scheduled for completion by the Fall of 2021.

Health Care Facility Seismic Resiliency

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): There is no plan at this time to seismically upgrade the County's healthcare facilities. The County is in one of the lowest risk regions for earthquake damage, and none of our facilities qualify as hospitals.

Flood Actions

Community Rating System (CRS) Maintain and Enhance

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Placer County continues to participate in the CRS program. It is an ongoing effort to help reduce flood losses and provide affordable flood insurance.

Stream Channel Clearing – Western Placer County

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project is implemented on a yearly basis. The project reduces flooding risks by maintaining overgrown vegetation and removing blockages, such as

downed trees and debris, at road crossings and within stream channels located in flood prone areas of Western Placer County.

Van Norden Dam Lowering and Meadow Restoration

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The notching of the spillway (i.e., dam lowering) was completed in 2019. The spillway notching portion of the project reduced flooding risks by reducing the volume of water impounded by the dam and mitigating for the potential for dam failure. The previous dam was determined by the State Department of Safety of Dams (DSOD) as being noncompliant with safety standards due to deterioration of the dam. The completion of the spillway notching removed the dam from DSOD jurisdiction. The meadow restoration has not begun and is currently going through the planning and design process with the South Yuba Citizens League (SYRCL) as the lead agency.

Miners Ravine Sewer Pipeline Repair

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The project was implemented to repair a pipeline abutment at the creek bank edge, which was severely structurally compromised by bank erosion. Higher creek flows could have caused movement of the abutment and failure of the sewage pipeline over the creek that was habitat for threatened species. The new abutment was completed in 2015 and prevented pipeline failure in the creek.

Sewer System Management Plan Updates

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Sewer System Management Plan is updated every 5 years. It contains Sanitary Sewer Overflow Response Procedures, which were last revised in October 2016. The plan contains required actions to respond and contain overflows, which will reduce severity of events.

Stormwater Drainage Improvements

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Numerous drainage improvements have been implemented across the county, and additional sites will be addressed with improvements over the next five years. One focus area will include Squaw Creek where floodplain restoration projects will continue over the next five years along with replacing/upgrading drainage infrastructure on Squaw Valley Road. It likely that ‘Squaw’ will be replaced with the name ‘Olympic’ within the next five years.

Bridge and Culvert replacement and drainage improvements

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Placer County maintains over 120 bridges and thousands of culverts. Numerous bridges and culverts were replaced since 2016, and additional ones will be repaired or replaced based on their structural and functional condition over the next five years

Urban Level of Flood Protection Mapping

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project is ongoing, but will not be carried forward in the Plan Update.

Elevate Remaining 95 Homes in the Dry Creek Watershed

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Will be completed when funding opportunities are available.

Elevate Repetitive Loss Structures in 100-year Floodplain

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is not started. It is being carried forward in the Plan Update.

Hazardous Material Actions

Natural Hazard Minimization Evaluation focusing on top 5 facilities in Placer County producing large quantities of hazardous waste/storage of such hazardous materials

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project is ongoing. Project will not be carried forward in this Plan Update.

Wildfire Actions

Large Strategic Fuel Break

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The French Meadows Forest Restoration Project is a 22,000-acre forest treatment in and around French Meadows reservoir and dam and was started in 2019 and is scheduled to be completed in 2023. Fire modeling was performed and two years of treatments have shown dramatic risk reduction of fire.

Fuel Breaks in the Wildland Urban Interface (WUI)

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Multiple areas were worked on. This can be seen on the image below.

Figure 2-5 Placer County Fuel Break Areas

Grantor	Grant Type	Grant Name	\$ Applied	Grant Writer	FSC / Area	Fiscal Sponsor	Submit	Apprvd	\$ Funded	Complete	Status (agreements, linked grants, etc.)
CAFire Foundation	Fuels Reduction	GL Roadside Disking Project	\$ 5,054	George Alves	GLFSC	RCD	11/15/19	01/15/20	\$ 5,054		
CalFire Prevention Grant	Fuels Reduction	Placer Chipper Program	#####	Sarah Jones	RCD	Placer RCD	12/03/19	03/10/20	\$ 874,848		
MFP	Fuels Reduction	Todd Valley II SFB	\$ 49,500	Luana Dowling	FH/IH	IHCC	03/02/20	04/07/20	\$ 49,500	Yes	
MFP	Fuels Reduction	Ridge View SFB	\$ 49,500	Luana Dowling	FH/IH	IHCC	03/02/20	04/07/20	\$ 49,500	Yes	
BLM	Hazard Fuels Reduction	Iowa Hill	\$ 300,000.00	Luana Dowling	FH/IH	IHCC	08/14/19	09/26/19	\$ 213,040	Yes	
BLM	Hazard Fuels Reduction	Michigan Bluff Planning and Implementation Grant	\$ 308,000.00	Luana Dowling	FH/IH	IHCC	04/27/20	Pending			
PG&E	Hazard Fuels Reduction	Forest Hill Fuel Break Phase II	\$ 98,000.00	Luana Dowling	FH/IH	IHCC	05/05/20	06/27/20	\$ 75,000	Yes	
MFP	Fuels Reduction	Ridge View SFB Phase II	\$ 49,500.00	Luana Dowling	FH/IH	IHCC	07/10/20	09/25/20	\$ 49,500	Yes	
TOTALS			\$ 2,159,554						\$1,316,442	61%	\$843,112.00
Grantor	Grant Type	Grant Name	\$ Applied	Grant Writer	FSC / Area	Fiscal Sponsor	Submit	Apprvd	\$ Funded	Complete	Status (agreements, linked grants, etc.)
CalFire Prevention Grant	Fuels Reduction	Placer County Coordinated Fuelbreak Phase 1	\$ 1,108,028	Elisa Noble/ Luana Dowling	RCD	Placer RCD	12/19/18	04/16/19	\$ 1,108,028		
MFP	Hazard Mitigation	Foresthill Tree Mortality Continuation 2019	\$ 49,550	Luana Dowling	FH/IH	IHCC	02/25/19	04/16/19	\$ 49,550	Yes	
MFP	Fuels Reduction	Baltimore Mine SFB Maint. 2019	\$ 49,550	Luana Dowling	FH/IH	IHCC	02/25/19	04/16/19	\$ 49,550	Yes	
PG&E	Fuels Reduction	Pipeline SFB	\$ 98,000	Luana Dowling	FH/IH	IHCC	05/31/19	07/22/19	\$ 98,000	Yes	
MFP	Fuels Reduction	Michigan Bluff SFB	\$ 49,500.00	Luana Dowling	FH/IH	IHCC	07/16/19	08/14/19	\$ 49,500	Yes	
BLM	Hazard Fuels Reduction	Iowa Hill	\$ 300,000.00	Luana Dowling	FH/IH	IHCC	08/14/19	09/26/19	\$ 40,090	Yes	
TOTALS			\$ 1,654,628						\$1,394,718	84%	\$259,910.00
Grantor	Grant Type	Grant Name	\$ Applied	Grant Writer	FSC Area	Fiscal Sponsor	Submit	Apprvd	\$ Funded	Complete	Status (agreements, linked grants, etc.)
MFP	Hazard Mitigation	Foresthill to Michigan Bluff Tree Mortality Removal Continuation	\$ 49,500	Luana Dowling	FH/IH	IHCC	02/07/18	04/10/18	\$ 49,500	YES	
MFP	Hazard Mitigation	Todd Valley Phase I Maint. Phase I	\$ 49,500	Luana Dowling	FH/IH	IHCC	02/08/18	04/10/18	\$ 49,500	YES	
PG&E	Fuels Reduction	Blackhawk & McKeon Ponderosa Roadside Clearing	\$ 75,000	Luana Dowling	FH/IH	IHCC	02/28/18	04/12/18	\$ 75,000	YES	
Cal Fire Prevention Grant	Fuels Reduction	Auburn Shaded Fuel Break	\$ 1,900,000	Elisa Noble/ Luana Dowling	RCD	Placer RCD	06/08/18	08/07/18	\$ 1,900,000		
MFP	Hazard Mitigation	Foresthill to Michigan Bluff Tree Mortality Removal Cont	\$ 49,500	Luana Dowling	FH/IH	IHCC	06/14/18	09/07/18	\$ 49,500	YES	
Total			\$ 2,123,500						\$2,123,500	100%	\$0.00
Grantor	Grant Type	Grant Name	\$ Applied	Grant Writer	FSC Area	Fiscal Sponsor	Submit	Apprvd	\$ Funded	Complete	Status (agreements, linked grants, etc.)
MFP	Hazard Mitigation	Foresthill to Michigan Bluff Tree Mortality Removal Continuation	\$ 49,900	Luana Dowling	FH/IH	IHCC	01/23/17	05/04/17	\$ 49,900	YES	
MFP	Hazard Mitigation	Todd Valley Phase I Maint. Phase I	\$ 49,900	Luana Dowling	FH/IH	IHCC	01/23/17	05/04/17	\$ 49,900	YES	
CAL FSC Clearinghouse	Hazard Fuel Reduction	Todd Valley II 30 acres	\$ 67,500	Luana Dowling	FH/IH	IHCC	04/18/16	03/07/17	\$ 67,500	YES	Pre-award submitted 2/28/17
PG&E	Hazard Fuels Reduction	Todd Valley II	\$ 75,000	Luana Dowling	FH/IH	IHCC	03/15/17	05/03/17	\$ 75,000	YES	
PG&E	Hazard Fuels Reduction	McKeon Ponderosa	\$ 33,333	Luana Dowling/ Elisa Noble	FH/IH	RCD	07/12/17	07/18/17	\$ 33,333	YES	
PG&E	Hazard Fuels Reduction	Gillis Hill	\$ 45,000	Luana Dowling/ Elisa Noble	PSFSC	RCD	07/12/17	07/18/17	\$ 45,000	YES	
Total			\$ 320,633						\$ 320,633	100%	\$0.00

Source: Placer County

Wildfire Public Education

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Firewise Program Stats from 2017 to Present: The Firewise program has added 62 new communities since 2016 and there are 131 communities currently in various stages of the program. These Firewise Communities have invested a significant amount of work hours and out of pocket costs to improving their communities Risk to Wildfire. Chipper Costs \$135,689.50, Other Equipment Costs \$90,699, Contractor Costs \$4,447,534, Home Improvement Costs \$1,499,015, Grants \$286,990, Vehicle Mileage \$4,304.88, Landscaping \$886,614, Miscellaneous \$418,326, Hours Worked Calculation \$3,501,815.66 Total Investment \$11,366,057.65

Every Firewise Community is a success story. Just getting Firewise education to communities and having community clean up days are success stories. There are so many. One that comes to mind is Trailhead Estates Firewise in Foresthill. The Trailhead Fire was contained at 5,646 acres. Trailhead Estates Firewise has been very involved with clean up days and maintaining their open space areas. This allowed firefighters to concentrate on the fire and not needing to clear around homes in the area. It also provided safe ingress and egress during evacuations.

Grand Oaks Firewise has worked with Auburn City Fire to develop a relationship with Union Pacific Railroad to get a fuels reduction project behind homes along the UPRR right of way. This has given several homeowners the 100' defensible space required and helped protect other areas of Auburn.

Ridge View and Michigan Bluff Firewise have been working with the Foresthill / Iowa Hill FSC, USFS, Cal Fire and BLM to complete a fuels reduction project in the Michigan Bluff, Ridge View Rd., Chicken Hawk Rd. area that connects over private and federal properties.

Firewise Community volunteers are helping staff education tables at events across the county. A great example was at the recent Auburn Home Show. There were volunteers from Pleasant Hill, Black Hawk Rd./Black Oak Ridge Estates, Cold Springs, and Falcons Point Firewise Communities, staffing the Placer Fire Alliance table at the Cal Fire Demonstration Building. They are not only educating their communities but reaching out to others to share the Firewise Program.

The Firewise program helps educate the community on defensible space, home hardening, flammable landscape, ingress – egress just to name a few. Community members meet to help complete the Risk Assessment and address common issues to enter in their Action Plan.

Natural Systems Protection / Education and Awareness Programs – Placer County Wildland Urban Interface (WUI) Strategic Planning

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is active. Strategic planning involves intense data collection and organization. Since 2017, strategic plans/evacuation plans have been built for the communities of Colfax and Foresthill. CAL FIRE defensible space inspectors now collect data during inspection such as gates and water sources that can also be integrated into the strategic planning project. The next step in this project is to further develop spatial data collection that will streamline and standardize the planning products and expand mapping coverage to additional communities.

North Fork American River Fuel Break

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Work on this project began in January of 2019. As of June 2021, approximately 900 acres have been completed using multiple treatments including cut/pile/burn, chipping, mastication, broadcast burning and herbicide application. Phase II is currently proposed as a CAL FIRE, fire prevention grant proposed by the Placer Resource Conservation District. The future phases of the project rely upon a Mitigated Negative Declaration with CAL FIRE as the Lead Agency. Full implementation of this project will require successive treatments over a 10 to 15 year period and a total of \$15 to \$20 million to complete the 5000+ acre project.

Defensible Space Programs

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The defensible space program is the first line of defense in wildland fire preparedness within Placer County. CAL FIRE has an active defensible space program that is growing in strength each year. Using a spatial data collection inspection process, defensible space data and other pre-fire structure information is collected that can be utilized for wildfire strategic planning and response. Information collected includes gate locations, water tanks and structure characteristics. The number of inspections, mainly on State Responsibility Area (SRA) land since 2017 are below:

Year	Number of Inspections	Percent Compliance
2020	4,868	94%
2019	2,544	95%
2018	3,303	77%
2017	1,147	65%

Source: Data extracted from CAL FIRE Defensible Space Database, 2021

Assembly Bill 3074, passed into law in 2020, implements a third zone for defensible space. This law requires the Board of Forestry and Fire Protection to develop the regulation for a new ember-resistant zone within 0 to 5 feet of the home by January 1, 2023. The intensity of wildfire fuel management varies within the 100-foot perimeter of the home, with more intense fuels' reduction occurring closer to the home.

Also in 2020, Placer County strengthen defensible space regulation within the County unincorporated areas. The Placer County Board of Supervisors unanimously voted to adopt a new Hazardous Vegetation Ordinance, which will govern the abatement of hazardous vegetation and combustible material on both vacant and improved parcels. This is a significant change from the previous county code which focused primarily on vacant land, leaving the state and local fire codes to govern land with structures. The new ordinance repeals and replaces the previous code and provides fire officials with consistent guidelines to ensure adequate defensible space is maintained on vacant land as well as around structures and enforcement mechanisms are in place to encourage compliance.

Projects that focus on Open Space/Defensible Space

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Placer County Board of Supervisors approved an ordinance in April 2021 that created the new Department of Parks and Open Space to better position the county to accommodate expanding park management responsibilities. With significant growth anticipated across the county in the coming years, the new department will be better positioned to grow and evolve and provide a more holistic strategy to the management of parks, trails and open space.

Among the department priorities is the commitment to ensuring defensible space on county land is managed in accordance with the Hazardous Vegetation Abatement Ordinance. Placer County is committed to being a good steward of its open space to protect the region from wildfire and to conserve sensitive habitats for generations to come.

Placer County has also been working in conjunction with the Cal Fire Washington Ridge Conservation Camp and the Placer CCC to complete fuel reduction projects on county owned open space.

Annual Multi-Agency Wildland Fire Drill

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Western Placer Fire Chief's organization continues to host the annual multi-agency wildland fire drill. It is a critical element to the strong interagency emergency response plan within Placer County. Due to Covid-19, the drill did not take place in 2020 or 2021, but plans are in place for it to resume in 2022.

Vegetation Management – Ongoing Maintenance of Fuel Breaks

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project by its nature is ongoing. Work done has reduced risks.

City of Auburn Mitigation Actions

Integrate Local Hazard Mitigation Plan into Safety Element of General Plan

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The currently adopted Local Hazard Mitigation Plan (LHMP) was incorporated by reference into the 2021 Safety Element. The City council adopted the 2021 Safety Element on May 24, 2021. Due to the timeframe of release, there is no specific evidence that the project reduced risks or resulted in loss avoidance.

Lincoln Basin (Downtown) Drainage Infrastructure

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Lincoln Basin drainage infrastructure is estimated to be over 100 years old. The water from Electric Street and Lincoln Way travel in 36” – 48” CMP that has deteriorated in places along Lincoln Way for approximately $\frac{3}{4}$ of a mile. The City of Auburn has responded to some isolated failures with the most recent occurring January 2007 at the Auburn Journal building along Lincoln Way. The other most significant isolated failure was on East Placer Street in January 1995 when a 42” CMP storm drain collapsed when a garbage truck fell through the pavement. The project is ongoing due to many buildings were built directly on top of the storm drain infrastructure. The City’s efforts to repair reachable sections of the drainage is still in process and has no specific evidence of loss avoidance.

Creek and Stream Cleaning and Maintenance Program

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not started due to limited funding resources.

Implementation of Storm Water Treatment Plan

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The City of Auburn in coordination between Placer County, the City of Roseville, the City of Lincoln, and the Town of Loomis developed the West Placer Storm Water Quality Design Manual. The City implements this consistent approach to address storm water management for the City of Auburn. The project is an ongoing effort to address storm water management there is no specific evidence of loss avoidance.

Electric Street Diversion Project

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not started due to limited funding resources.

Old Town Auburn Storm Drain System

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Old Town Auburn Storm Drain System is the one of the main drainage channels for Old Town consisting of 600 feet of old unreinforced and newer reinforced box culverts. The unreinforced portion of the channel is made up primarily of broken rock stacked vertically with a brick arch roof. The base of the channel consists of exposed bedrock, gravel, and new concert. Portions of the channel had eroded and undermined the vertically stacked rock walls creating risk for blockage or complete collapse of the system. The Old Town Auburn Storm Drain was replaced, where possible, with 4 to 7.5 foot diameter pipes which discharges into the natural drainage channel. The project is an ongoing process there is no specific evidence of loss avoidance.

American River Canyon Shaded Fuel Break

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The City of Auburn Fire Department in coordination with the Bureau of Reclamation, Cal Fire and California State Parks, has developed and implemented a fuel modification project known as the American River Canyon Shaded Fuel Break. This fuel reduction project encompasses both public lands and private lands and is strategically placed along the American River Canyon rim in effort to provide a "defense" against wildfire. The project was implemented in 2002 and is still in-progress today.

Community Education on Wildfire

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The City of Auburn Fire staff participates in ongoing training programs, designed to ensure that they stay current with codes, regulations, current issues and best practices. In addition, Auburn City Fire advocates the "Ready, Set, Go!" message to promote wildfire education and conduct outreach programs. This is of particular importance for residents in Wildland Urban Interface (WUI) areas within the City. The City's efforts to educate the community on the risk of wildfires is still an ongoing process and has no specific evidence of loss avoidance.

Residential Home Inspections for Compliance of Fire Safe Standards; Defensible Space.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Auburn City Fire Department as of 2019 offers free home consultations that focus on wildfire education, home hardening, and improving defensible space. The program is voluntary based and the efforts reduce wildfire risk but there is no specific evidence of loss avoidance.

Maintenance of the Private Lands Portion of the Shaded Fuel Break Along the Rim of the American River Canyon and the Auburn State Recreation Area (ASRA)

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The City of Auburn Fire Department in coordination with the Bureau of Reclamation, Cal Fire and California State Parks, continues to provide

maintenance of the private land portion of the American River Canyon Shaded Fuel Break and Auburn State Recreation Area. Annual work is completed each year using a combination of mechanical and natural thinning processes. The project is still ongoing and the efforts reduce wildfire risk but there is no specific evidence of loss avoidance.

City of Colfax Mitigation Actions

Integrate Local Hazard Mitigation Plan into Safety Element of General Plan

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This is scheduled to be completed in 2021.

Continue Annual Weed Abatement Ordinance

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing.

Colfax Schools Evacuation Site Shaded Fuel Break

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project was completed in 2020, but continued maintenance is needed/

Evaluate the Need and Feasibility of Improving Fire Prevention for the Historic Business District

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing.

City of Lincoln Mitigation Actions

Integrate Local Hazard Mitigation Plan into Safety Element of General Plan

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Complete. The 2016 LHMP was integrated into the Safety Element of the City of Lincoln General Plan on March 28, 2017, through City Resolution 2017-63.

Lincoln Boulevard: Auburn Ravine Bridge – Reconstruct Bridge

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not started due to limited funding resources.

McBean Park Drive: Auburn Ravine Bridge – Additional 110' Span

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project is currently in design. Construction is anticipated to begin in 2026.

Lakeview Farms Regional Volumetric Mitigation Facility

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project is currently in design. Construction is anticipated to begin in 2023.

Gladding Parkway, Lincoln Boulevard, McCourtney Road – Stream Restoration And Culvert Improvement

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not started due to limited funding resources.

"O" Street Drainage Improvements

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not started due to limited funding resources.

7th Street Drainage Improvements

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not started due to limited funding resources.

Auburn Ravine at State Route 193 Bridge

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Item will be mitigated with the McBean Park Drive: Auburn Ravine Bridge – Additional 110' Span project which is currently in design. Construction is anticipated to begin in 2026.

Auburn Ravine at State Route 65 Bridge

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not started due to limited funding resources.

Ingram Slough – Orchard Creek Return Channel

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not started. Schedule is dependent on the Nader Ranch/Village 7 development which has not begun.

Markham Ravine – Updated FEMA Analysis And Mapping

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The City of Lincoln is currently working on a project with Placer County Flood Control District to evaluate and update the FEMA mapping of Markham Ravine. FEMA review of the project is expected to be complete in 2021, with updated mapping to follow thereafter.

Markham Ravine Drainage Improvements – Union Pacific Railroad & State Route 65 Crossings

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not started due to limited funding resources.

Auburn Ravine Stream Restoration Projects (Analysis and Repairs)

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): City of Lincoln is in preliminary discussions with the California Department of Fish and Wildlife to implement a fish habit project on Auburn Ravine that could also potentially provide some of the necessary creek restoration improvements.

Markham Ravine Streambed Restoration Projects (Analysis Only)

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not started due to limited funding resources.

Coon Creek Streambed Restoration Projects (Analysis Only)

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not started due to limited funding resources.

Fire Prevention and Fuels Management Plan

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not started due to limited staffing and funding resources. New development projects are required to produce a Fire Prevention and Fuels Management Plan for any new areas in the city, however.

City of Rocklin Mitigation Actions

Integrate Local Hazard Mitigation Plan into Safety Element of General Plan

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): On November 8, 2016, the Rocklin City Council adopted Resolution No. 2016-250, which approved the 2016 Local Hazard Mitigation Plan (LHMP) and adopted the LHMP by reference into the Safety Element of the City of Rocklin General Plan. There is no specific evidence that the project reduced risks or resulted in loss avoidance.

Federal Emergency Management Agency (FEMA) Floodplain/Community Rating System (CRS)

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The project was not implemented. The City Engineer at the time reviewed and evaluated the CRS program and determined it was not worthwhile to pursue.

Creek Channel and Drainage Way Clearing and Maintenance

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Depending on the location, this work happens every 1-3 year and will continue to be a task of ongoing maintenance well into the future. These efforts reduce flooding risk but there is no specific evidence of loss avoidance.

High Water Use Landscape and Irrigation Retrofit

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This task has been completed. It is undetermined whether this task reduced risks.

Open Space Fire Prevention & Vegetation Management Prescribed Grazing

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Seasonal work is completed each year using a combination of grazing and weeding. These efforts reduce wildfire risk but there is no specific evidence of loss avoidance.

GIS Based Mapping of Pertinent Information that can be used by All Agencies in the Development of Plans and During Emergency Incidents

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): As new development occurs, these layers are updated to reflect the changes that are made to the community. These efforts allow the City to better plan and be prepared for responses to emergency incidents, but there is no specific evidence that the project reduced risks or resulted in loss avoidance.

Town of Loomis Mitigation Actions

Integrate Local Hazard Mitigation Plan into Safety Element of General Plan

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Town has not completed a comprehensive update of its General Plan since 2001. Incorporating the LHMP into the Safety Element will be implemented during the current General Plan Update.

Local Bridges Evaluation Program

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Town has not yet started this program because of funding limitations. The Town hopes to implement this program in the future. Part of being able to inspect and evaluate the local bridges that cross over water channels is dependent on the renewal of the Town's Routine Maintenance Agreement (RMA) permit. The Town is in the process of obtaining the RMA Permit.

Address signage for property addresses

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Town has slowly been implementing this program because of funding limitations. The Town hopes to implement this program in the future.

Delmar Avenue Headwall Reconstruction Project

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Town has not yet started this program because of funding limitations. The Town hopes to implement this program in the future and will build it into future Capital Improvement Plans.

Creek Maintenance Secret Ravine & Antelope Creek

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Town is also in the process of renewing their RMA permit with California Fish and Wildlife.

Reconstruction of Brace Bridge at Secret Ravine

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Town has not yet started this program because of funding limitations. The Town hopes to implement this program in the future.

Raise Flood-Prone Houses Along Loomis Creeks

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Town has not yet started this program because

of funding limitations. The Town hopes to implement this program in the future, can address in the 2021 GP Update, Public Services and Safety Element.

Alta Fire Protection District Mitigation Actions

Apparatus Water Fill & Drafting Location Improvements

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project has not yet been started/implemented.

Evacuation / Reunification Center Improvements

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project has been implemented and is ongoing. The fire district has made improvements to the Community Hall / Fire Department both on its own and in coordination with PG&E. The Community Hall / Fire Department is an alternate evacuation location for the Alta Dutch Flat Elementary school, and is a designated location for off-campus Child Reunification location. PG&E has also designated the Community Hall / Fire Department as a PSPS community resource center.

Natural Systems Protection / Education and Awareness Programs and Community Fuel Breaks

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing the Alta Community but most of the tasks related to this have been realigned to the Alta Firewise Community group.

Natural Systems Protection / Education and Awareness Programs

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing the Alta Community but most of the tasks related to this have been realigned to the Alta Firewise Community group.

Emergency Communications and Information System Improvements.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project has not yet been implemented, but more recent interest in the community has been to upgrade local communications including, but not limited to HAM radio and GMRS radio communications. Many Firewise communities are making use of GMRS for communications during emergencies and the Alta Fire Protection district has a communications/antennae pole that could be used as an antennae location.

Alta Fire Protection District CERT Team

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The CERT team completed the necessary training to be an active and certified CERT team, however lack of implementation by Placer County emergency services resulted in the CERT members losing interest and the CERT team membership dropped to just a couple members, so CERT was disbanded by its membership.

Reflective Addressing

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This is an ongoing project taken on by the Alta Residents, Alta Firewise Community and the Alta Fire Protection District.

Alpine Springs County Water District

Emergency Electrical Generator Replacement Project

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project was not started and will not be carried forward in this Plan Update.

Water Storage Tank Replacement Project

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project was not started and will not be carried forward in this Plan Update.

Mineral Springs Soil Bank Stabilization Project

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project was not started and will not be carried forward in this Plan Update.

Alpine Meadows Consolidated Defensible Space Continuation Project

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project was not started and will not be carried forward in this Plan Update.

Foresthills Fire Protection District Mitigation Actions

Completion of Fuels Management Projects within the Foresthill/Iowa Hill Fire Safe Council, Greater Auburn Area Fire Safe Council and Placer Sierra Fire Safe Council Areas of the Western Slope of Placer County.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Fuels Management for these areas will continue for years to come. Every year fuel reduction is done in the North and Middle Fork of the American Rivers to protect the communities along the ridge of the canyons.

Foresthill Biomass Project

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): No update was available on this project.

Assess and Enhance Foresthill Fire Protection District (FFPD) New Subdivision, Hazard Fuels Clearing and Maintenance Ordinance. Put Programs in Place with Homeowners Associations in CC&R's and Maintenance Contracts.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): FFPD enacted ordinance 2020-02 – Hazardous Vegetation Abatement and signed an agreement with Placer County Code Enforcement for the ability to enforce the County's hazardous vegetation ordinance as well. The Fire Safe Council, Firewise Communities as well as HOA are working to educate residents the benefits of Defensible Space and Home Harding. Foresthill has 14 Firewise Communities and they have done very well.

Todd Valley Shaded Fuel Break

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Shade Fuel Breaks from Mosquito Ridge to McKeon/Ponderosa are 90% completed. These Fuel Breaks need maintenance. The fuel breaks were used as anchor points for the Trailhead Fire 5 years ago to protect the Todd Valley area.

Completion of Fuels Management Projects within the Foresthill/Iowa Hill Fire Safe Council, Greater Auburn Area Fire Safe Council and Placer Sierra Fire Safe Council Areas of the Western Slope of Placer County.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Loomis Fire Protection District Mitigation Actions

Identify and inspect ALL bridges in LFPD

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Loomis Fire Protection District was absorbed by South Placer Fire Protection District. These actions were not tracked, so it is assumed they were not started. These will not be carried forward in this Plan Update.

Vegetation Management for Open Areas

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Loomis Fire Protection District was absorbed by South Placer Fire Protection District. These actions were not tracked, so it is assumed they were not started. These will not be carried forward in this Plan Update.

Address Signs for Rural Residences

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Loomis Fire Protection District was absorbed by South Placer Fire Protection District. These actions were not tracked, so it is assumed they were not started. These will not be carried forward in this Plan Update.

Adopt 2016 CFC, CBC, and local standards

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Loomis Fire Protection District was absorbed by South Placer Fire Protection District. These actions were not tracked, so it is assumed they were not started. These will not be carried forward in this Plan Update.

Nevada Irrigation District Mitigation Actions

Combie Phase 1 Replacement

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Bear River Siphon portion of the project has been completed and is in service. The replacement of the canal with reinforced concrete pipe started in 2019 and is scheduled to be completed by June of 2021. The overall cost for this multi-year project is \$27 million. Over 50% of the District's water flows through this system, including two WTP. This will reduce the risk of failure due to rockslide, tree fall, and seismic events. Last winter, a large oak tree fell onto a section of completed pipe. No damage to the pipe was evident. Had this still been the thin walled concrete flume, this section would have failed due to the tree fall.

Centennial Water Storage and Power Supply Project

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The District has completed geotechnical and preliminary design of the proposed dam. The environmental studies are underway and development of the draft environmental impact report has begun. Cultural resources review and field studies have been done and the District is in consultation with several tribes as part of the AB52 consultation process. The Board of Directors have directed staff to focus on the District's Plan for Water process so work on this project has slowed until the Plan for Water process is complete.

Water Service Auburn Valley CSD

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The project has not begun as funding for this project is currently not available. The District overall has been working on annexation of parcels within the District boundary county wide.

NID Headquarters Office Generator

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The project was completed in 2018. The District utilized this generator to maintain the entire Grass Valley complex, including operations, maintenance and customer service during several PSPS events and other power outages in 2018, 2019 and 2020.

Orr Creek Diversion

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The project has not yet been implemented. District staff is currently working on a District wide reservoir storage study that will help guide the District in developing strategies regarding this complex problem.

Reservoir Cleaning

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The District has completed cleaning of several reservoirs including the Loma Rica Reservoir, which services the Loma Rica WTP since the last update. The cleaning of Loma Rica allows for more raw water storage for the WTP during outages, both planned and emergencies. District staff is currently working on a District wide reservoir storage study that will help guide the District in developing strategies regarding this complex problem.

Canal Culvert Replacement Program

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing. NID's Encroachment Unit continues to identify and remediate/replace multiple culverts on a continuous basis. Most replacements occur outside of the irrigation season (April 15 to Oct 15) unless a failure occurs that requires an emergency outage and replacement. Replacement of these culverts reduces the risk of failure and emergency outages on District facilities.

Northstar Community Services District Mitigation Actions

Martis Landing Drainage Swales and Catch Basins

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has been completed and has reduced channelized flows between the Martis Landing and Basque subdivisions. This work has successfully reduced the potential for localized flooding for homes in the Basque subdivision.

Continue Easement Access Road Water Bar Maintenance and Replacement Program

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Sewer and trail easement access roads are regularly maintained to prevent damaging channelized flow. Water bars are added/maintained by utility operations staff as necessary. One such recent water bar addition in the Big Springs subdivision has effectively prevented localized channelized flow damage to a residential property.

Fuels Reduction @ Sawmill Reservoir

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project has been funded through a 2019 California Fire Safe Council Grant Cycle. The expected completion of phase I (Treatment One, 9.0 Acres) of this project will be by the fall of 2021. It is estimated that a total of three phases (Three Treatments) will be needed to place this project into a maintenance mode.

Fuels Reduction Program

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Defensible Space - Since 2016, the NFD has hired 3 inspectors to assist with defensible space and/or fuels reduction. 2-Inspectors for Defensible Space and one Forestry Assistant for Forest Fuels Reduction. The NFD has made a concerted effort in achieving its goals and has set new priorities in the 2021 updated Community Wildfire Protection Plan (CWPP). Since its inception, the CWPP was developed as guidance tool for the purposes of identifying and reducing the threat of wildfire hazards and restore the community forest to a healthy and sustainable condition.

Forest Fuels Reduction – Since 2008, a total of 1,400 acres has been treated within and outside the borders of the 1,855-acre community. A total of \$1,850,000 has been awarded in grant funding to help mitigate forest fuels and transition forested open space common areas into a “Maintenance Mode”.

Priority Number One of the updated CWPP is to reduce forest fuels along identified evacuation routes within the Community of Northstar. A 300’ buffer zone will be established along the identified routes to ensure safe passage in the event of a community wide evacuation while allowing emergency vehicles to respond by entering the community

Storm Water Drainage Inlet Maintenance

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Placer County continues to maintain County-owned drainage facilities within District Boundaries. Maintenance includes utilization of a vacuum truck to remove debris from drainage inlets annually. Benefits of these activities can be seen in the limited damage incurred during the flood events of winter 2017/2018.

Siphon Line

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The District's parallel sewer siphon mains were professionally cleaned and video inspected in summer 2020 per the maintenance schedule laid out in the Sewer System Management Plan. Routine maintenance of this critical infrastructure has been successful in preventing disturbances in sewer service in the community.

Provide Power from Mobile Generator

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project was not implemented. It was deemed an unnecessary cost based on the District's Emergency Backup Power Plan. It has been removed from the table above.

Green Waste Recycling Program

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Since the inception of the program in 2007, the facility has had multiple locations and has set record amounts of collected biomass annually. Collected material has been utilized at co-generation plants and used for erosion control practices. This program has been successful for residential and commercial property owners to have a place to take the material and help subsidize the cost of defensible space. The program looks to expand its operations by creating its own biomass facility to utilize its own material and provide its own heat source back into the community. The inception of the biomass facility is in its early stages of development.

Enhance our current Defensible Space Program by seeking funding to hire a part-time employee to assist the Fire Prevention department in running this program

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Beginning in 2018, NFD hired its first Seasonal Fire and Life Safety Inspector. Since then, NFD now has 2 inspectors assisting the department with our defensible space program. The ability to have 2 inspectors onboard for a season has allowed NFD to pursue bringing 1/3rd of District (approx. 250-300 residential properties) under defensible space compliance each year. Additionally, the work of the inspectors (focusing on residential properties) allows for the Division Chief to focus efforts towards bring commercial properties under defensible space compliance. Inspectors are charged with finding property corners/lines, marking brush with blue paint indicating removal, performing inspections, educating the property owner and helping manage the Green Waste Recycling Center.

District Water Conservation Program

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): A water conservation program was successfully implemented by the District after several years of regional drought were experienced. Although water supplies in the Martis Valley Groundwater Basin were not in jeopardy, water conservation remains an important practice as a steward of the aquifer.

North Tahoe Fire Protection District Mitigation Actions

FCC P-25 Interoperability Radio Systems

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing, nearly completed. \$450,000 spent with grant, capital improvement and general fund to replace all base, mobile and portable radios. These radios were upgraded to meet 2018 FCC guidelines and DOHS SAFECOM 6 Levels of Interoperability. These radios also meet CALFIRE/CalOES standards and specs which assists with interoperability during in-district and out of districts assignments. Models: Portable KNG p150cxd, Mobile KNG m150. North Tahoe Fire also spends approximately \$145,000 annually for Grass valley ECC Dispatch Services, and \$50,000 annually for communications general fund budget for radio repair, replacement, and maintenance. Communications is a crucial component of all risk emergency response to ensure timely dispatch and effective communication during an incident and with incoming resources from varying agencies (FPDs, FDs, USFS, CALFIRE...etc.).

District GIS Technology, Equipment, Database and Mapping Improvements

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing. A GIS specific laptop with ArcGIS license were purchased with general fund dollars. Incident view updates and Hydrant mapping GIS were improved. NTFPD still has significant improvements to make regarding this action to get up to date with GIS mapping and capabilities.

North Tahoe Fire Protection District Critical Facility Infrastructure Improvements

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing, unable to be completed. Barriers: funding, facilities master planning, property acquisition, funding studies, plan development and construction.

Seiche Wave Warning Systems, Signs and Public Education

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project was not started. North Tahoe Fire will be reworking this Mitigation Action into a larger warning systems, signs and public education mitigation action for wildfire, avalanche, seiche and other hazards/events. (all hazards)

Defensible Space Inspection, Tree Marking, Chipping Program, and Public Education

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is Ongoing and will remain a priority. NTFPD secured \$1,386,243 in grant funding as a part of the Tahoe Network of Fire Adapted Communities and \$623,079 was spent as of 2016 with the grant period of performance extending through 2023. This Mitigation Action (regardless of funding) is planned to continue into perpetuity where NTFPD offers Defensible Space Inspections, Chipping, Tree permitting assistance, and outreach and education. Yes, this

projected was implemented. Yes, the project reduced risks. NTFPD can provide metrics of Defensible Space Inspections completed (compliant and non-compliant), Chipping requests received (with estimations of cubic yards biomass removed), Number of neighborhood leaders recruited, and Number of Firewise Communities Recognized. We have had ignitions (wildfire and structure fire) successfully suppressed, We have not had a large wildfire transition from our community to the forest or conflagration which may be interpreted as evidence of loss avoidance.

Hazardous Wood Roof Replacement Program

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This Project was not started. NTFPD did have a successful wood roof replacement program funded by FEMA in 2010. We will be removing this Mitigation Action and adding “Home Hardening” as a component of the Defensible Space Project.

Regional Water System Fire Protection Upgrades and Interoperability

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Not started. Water system upgrades fall to the responsibility of water purveyors. NTFPD will be combining this action with the Hydrant risers/replacement/markers into a “Water for Fire Suppression Collaborative” where NTFPD plans to work with its water purveyors to flow test, paint, and notify of deficiencies in order to support increased water supply during structure and wildfires.

Skid Steer Loader with Transport Trailer, Fuels Reduction Masticator Attachment and Snow Blower Attachment

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Not Started. Funding was the limitation. NTFPD will rework this mitigation action into the 2021 update as increased capacity for snow removal and fuels mastication will remain important.

Hydrant Risers, Replacements and Markers

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing – Started but not completed. NTFPD has created a beta testing system for new hydrant markers and a pilot program was rolled out to install tall, reflective hydrant markers with a single bolt on the bonnet of the hydrant. Previous methods involved standing on tail boards of engines to drive in tall stakes within 3’ of hydrants, which posed a safety hazard and did put fire personnel within 3’ of the hydrant. The new system would locate the exact hydrant location to aid in quicker access time with extreme snowpack. This also aids in finding hydrants at night (reflective marker) and when they are buried or blocked by snow. Quickly finding hydrants, especially during extreme snow events is crucial to maintaining adequate water flow for fire suppression capabilities. NTFPD is not responsible for hydrant replacement, maintenance, risers, or markers but we will be adding this mitigation action item into a “water for fire suppression collaborative” project since water for fire suppression is important and crucial during wildland and structure fire events, as well as a source of domestic water and fire protection systems.

North Tahoe Public Utility District Mitigation Actions

Update SCADA Equipment and Telecommunications Infrastructure

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): SCADA and Telecommunication infrastructure has been updated & replaced.

IT and Telecommunications Improvements for Disaster Preparedness

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not been implemented. Need to develop plan to evaluate needs for implementation.

Update Emergency Response Plan

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Emergency Response Plans follow the completion of the Risk and Resilience Assessment (RRA). The RRA is currently under development and will be complete by June 30, 2021, per AWIA 2018 Federal Regulation. The Emergency Response Plan update to be completed by 12/31/2021 per AWIA 2018 Federal Regulation.

Backup Generator Installation at Critical Facilities

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Installed backup generator at NTPUD Base Facility; working on plan for generator at the Kingswood West water storage tank site; applied for FEMA grant at the North Tahoe Event Center (emergency shelter/evacuation center), but did not get recommended by CalOES due to funding priorities.

Fuels Reduction around Critical Infrastructure and North Tahoe Regional Park

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Fuels reduction work has begun in the North Tahoe Regional Park; Vulnerability Assessment (VA) is underway for critical infrastructure through a Proposition 1 grant. Once the VA is completed, design will be completed by a Forester, followed by implementation.

Kingswood West Subdivision Emergency Evacuation Access

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Not implemented. Is not within NTPUD's jurisdictional authority.

North Tahoe Regional Park Road Improvements for Emergency Access

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Not yet begun. Has not been a high priority with NTPUD or North Tahoe Fire Protection District.

Seismic Study and Retrofit of Critical Infrastructure

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Completed Seismic Study of critical buildings at NTPUD Base Facility and applied for FEMA grant, but project was not recommended by CalOES due to funding priorities. Still need to perform Seismic Studies at other critical infrastructure.

Sewer Main Replacements in Shorezone of Lake Tahoe

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Not yet begun. Has not been a high priority with NTPUD due to relocation constraints.

Water Booster Pump Station Rehabilitation/Replacement

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Not yet begun. Project is in District's long-term CIP plan.

Increased Storage Capacity for Dollar Cove Water System

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Not yet begun. Options need to be studied.

Water System Interties

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Not yet begun. Intertie locations being analyzed.

Placer County Flood Control District Mitigation Actions

FEMA CTP DFIRM Mapping Study

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): FEMA updated the Digital Flood Insurance Rate Maps (DFIRMs) for Placer County in 2018. This updated mapping included updated and new mapping for several streams studied with the Cooperating Technical Partners No. 1 and 2 (CTP1 and CTP2) projects. The next phase of updated mapping is currently ongoing with CTP3. CTP3 also includes updated and new mapping for several additional streams. These projects help reduce risk through the assessment and identification of flood hazards.

Pursue Regional Detention and Retention Projects within the Dry Creek and Cross Canal Watersheds

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Antelope Creek Flood Control Project, Phase 1 Upper Weir was completed in 2018. This project is the first of the final two phases of regional detention projects planned for the Dry Creek watershed. The completed Phase 1 of the project reduces risks by reducing the peak flow rates downstream of the project. Implementation of Phase 2 of the project is ongoing and will reduce risks by further reducing peak flows downstream of the project. District staff continues to seek funding and coordinate with agencies within the watershed to pursue implementation of Phase 2.

Implementation of regional retention within the Cross Canal watershed is ongoing. District staff continues to coordinate with agencies within the watershed to pursue implementation.

Update Hydrology and Hydraulic Models within the Cross Canal Watershed

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project has not been implemented. District staff continues to seek funding and coordinate with agencies within the watershed to pursue implementation.

Upgrade of Flood Warning System to Include Additional Gage Locations and Flood Forecasting Capabilities

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The initial upgrade of the Flood Warning System including two new gage installations was completed in 2019. This included District base station and software upgrades. The second phase is ongoing that will upgrade the District's remaining transmitters and install two additional gages. This project will reduce risks when complete by providing additional gage monitoring locations in the system in addition to providing faster and more reliable data collection.

Placer County Water Agency Mitigation Actions

Hillside Slope Stabilization

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): There are several examples of failed slopes under the Landslide, Mudslide, Debris Flows section of this report. These slides restrict travel. Many of these roads are not owned by the Agency, but impact both electricity production and recreational access. Since 2016 the Agency has spent more than \$2.1-million in rock fall protection at Hell Hole, the Middle Fork and Ralston locations and it has been extremely effective in preventing losses. Figure R-8 Rockfall Netting in the PCWA annex above Hell Hole is an example of rock fall netting protecting a roadway and bridge.

The District is unaware of any loss in a protected area. Just outside of a protected area on Interbay Road the Agency had a slide that was cleaned up and mitigated in 2018-19. This loss was about \$1.2 million. Because we owned that section of the road insurance funding covered the loss including the stabilization of the hillside that made the area safe for travel. Insurance funding for this type of loss is no longer available to the Agency.

LL Anderson Dam Spill Way Modification

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Placer County Water Agency Middle Fork Power Finance Authority completed a \$200 million project to modify the spillway of the LL Anderson Dam. The widened spillway will safely pass the revised probable maximum flood determined by the US Army Corps of Engineers and increase operational flexibility of the French Meadows Reservoir. The project was completed in 2016 and helped to manage severe precipitation received in the winter of 2017-18.

Placer County Water Agency completed the core raise on the Hell Hole Dam in 2020. Spillway control for this Dam is in a planning phase but would allow a greater level of water management within the Hell Hole Reservoir. As severe weather events seem to be increasing, greater control at the top of the watershed prevents or minimizes flooding in lower watershed areas.

Water System Interties

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Water system interties create redundancy in the water supply should hazards or disruption damage the supply system. This is critical for all aspects of water including drinking water, firefighting and agricultural supplies. Three capital projects were completed in conjunction with the Nevada Irrigation District. Between 2017 and 2019 The Mt. Vernon, Locksley Lane and the Live Oak Interties all became functional interties between water systems. In addition to other existing interties, there have been no critical long-term disruption to water delivery. Interties have been successfully used for main line breaks, during maintenance, and for canal outages. The interties can be used from an operation standpoint, however interties by nature expand the redundancy and resilience of the water supply.

Vegetation Management and Brushing

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Placer County Water Agency owns over 150 parcels of property and has easements that extend the hundreds of miles of canal and water delivery systems. With increased wildfire frequency and severity, the Agency has responded proportionately in an attempt to reduce wildfire fuels and ignition sources around the Agency operations. In addition to our normal weed & brush control measures that include crew and goat work, multiple large projects have been completed with operational funding, capital funding and community partnerships with Cal-fire.

- By far one of the most publicized projects is French Meadows Forest Fire Restoration Project - Is a community partnership founded to reduce high-severity wildfires and promote watershed restoration through forest management. The French Meadows partnership restored forest health to 1,066 acres of critical headwaters in the first year of the French Meadows Forest Restoration Project reducing stand density by over 30% and harvesting over 3 million board feet of timber. This prevented a loss of unique wet meadow habitat critical for reducing the intensity and spread of wildfire. Willis, Towers, Watson Insurance in partnership with The Nature Conservancy is in the process of finalizing a white paper on the project that will demonstrate the wildfire mitigation results.
- Vegetation Management & Brushing of the surrounding area of the Maidu Field Office through the Canyon Fire Resiliency Project and 2020 Agency Capital funding.
- Vegetation Management & Brushing below American River Pump Station power lines was funded by 2020 Agency operational funding.
- 2019 Monta Vista Treatment Plant was thinned and brushed in cooperation with Cal-Fire and adjacent landowners to ensure water storage would be safe from wildfire and treefall. This was accomplished with operational funding and partnership with Cal Fire.
- In 2015, 33-acres around Lake Arthur were cleared and brushed in partnership with Cal-Fire and local landowners. 2016/17, 78 acres around Lake Theodore were cleared and brushed in partnership with Cal Fire and local landowners. A Vegetation Management & Brushing project was completed on a large plot of un-developed Agency Land on Bill Francis Drive. The project was completed with a Cal-Fire partnership.

The Agency continues to perform vegetation management activities including maintenance of the areas previously treated working with the cooperation of Cal-fire and other community partners. We believe that this work has decreased wildfire potential through regular fuel management.

Enhance Canals by Converting Earthen Canals to Gunite-Lined Canals in Critical Areas

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Canal systems can be overtopped in low areas when there is intense rain in combination with fall vegetation debris. Overtopping can erode the embankments jeopardizing the integrity and physical stability of the canal. In some cases, canals or canal spillways can be washed away or slide down hillsides jeopardizing the water supply and/or causing property loss and safety issues. Guniting the canal system can enhance the stability of earthen canals and reduces loss from water seepage in comparison to earthen systems. Pollution or hazardous spills are also easier to

control and remediate in gunite lined canals. The Agency budgets a million dollars a year to repair or gunite roughly two miles of earthen canals each year. This work reduces water and property loss.

Replace Wooden Flume Structures

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Flumes are a critical part of the canal system carrying water across valleys and ravines in a gravity fed canal system. The Agency seeks to replace wooden flume structures where practical to prevent wildfire and service interruption, including water supply to public and private treatment plants. In the last five years, the Long Ravine, Secret Town, Penryn #1 Flumes were put into pipe through internal Capital funding. In ground structures add resiliency to the raw water supply (canal) system since they are unlikely to be impacted by wildfire. We have no instance of a wildfire burning through flume, however the probability of this occurring in geographic areas designated as a high hazard for wildfire are very high. Other canal failures such as the PG&E Bear River Canal failure in April of 2011 did jeopardized the water supply system.

De-Silt Reservoirs.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): In 2020 the Sediment Removal project included removing accumulated sediment from Middle Fork Interbay, which is a regulating reservoir within the Middle Fork American River Hydroelectric Project. Work at Interbay was limited to the annual five-week-long system outage in October when reservoir levels were lowered. Work included sediment excavation, hauling, processing, and placement at select sacrificial sediment augmentation locations, permanent fill embankment, and temporary fill embankment location. Sediment removal increases storage capacity and dam safety allowing for increased levels of storm water, making low level outlets usable and increasing dam safety and the long-term water storage supply. The dams have successfully endured heavy precipitation and run off years like the winter of 2017-18.

Also in 2017-18 sediment was removed from the Ralston Afterbay. In early 2017, the Middle Fork Project experienced record historic storms that eroded large areas of recently burned terrain within the watershed resulting in the deposition of large volumes of sediment in project rivers and reservoirs. The winter sediment accumulation has been far greater than normal and impeded the ability to operate the low-level outlet at Ralston Afterbay Dam (see Figure 2-6). The low-level outlet slide gate was fully buried and was currently inoperable causing dam safety concerns. Up to 5,000 cubic yards of material is estimated for removal in order to reestablish normal operability. Some \$5-million dollars was spent on sediment remediation.

Figure 2-6 Ralston Afterbay



Source: PCWA

Placer Hills Fire Protection District Mitigation Actions

Assess And Enhance Placer Hills Fire Protection District (PHFPD) Onsite Water Requirements For Minor Lot Splits

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Since each lot split/development is unique; residential vs commercial, multiple structures, and single family dwellings, a single standard does not always apply to each situation in the same manner.

The Placer Hills Fire Protection District utilizes NFPA 1142, NFPA 22, Wildland Urban Interface Code (WUI), and Placer County development standards, as guidelines for each specific project requiring water for firefighting and for fire protection systems.

These are the standard guidelines used for development within the District.

South Placer Fire Protection District Mitigation Actions

Vegetation Management for Open Areas

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project has been implemented and continues annually. The greatest threat to our community is an uncontrolled vegetation fire and therefore it is always a top priority each year during fire season. To date the largest wildland fire we have had in our area has been approximately 5 acres.... Typically, these fires are limited to an acre or less and if any structures are involved it is usually just one. This is possible due to an aggressive attack from our Operations Division and strong support from our neighboring Fire Agencies but more importantly from vegetation management that limits flammable growth, ensures accessibility, and slows the rate of spread

Address Signs for Rural Residences

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): South Placer Fire District implemented a program where Rural Address Signs can be ordered directly from our website. Since implementation we have seen a far greater amount of readable and well-placed address signs and as such the risk of our crews missing an address or accessing the wrong property have been greatly diminished. Having an address sign that is clearly visible is a huge help to our crews and is especially important when a medical call has occurred at an address which is the type of emergency that cannot be seen from the roadway.

Adopt 2016 CFC, CBC, and local standards

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Since the last LHMP the South Placer Fire District adopted the 2016 CFC, CBC and local standards that make up our local Ordinance. This project reduces risk to our community by ensuring that both residential and commercial properties are built with the current and most up-to-date standards available. Our local ordinance plays a critical role for Fire Protection with our jurisdiction as well as it goes above and beyond State adopted standards and addresses items specific to our jurisdiction. Last year, Medical Emergencies accounted for roughly 72% of our calls where structure fires were limited to just 13% of our emergency response. Modern building codes and our local ordinance have made homes and commercial buildings much safer and as a result we are running fewer and fewer structure fire calls each year.

Olympic Valley (was Squaw Valley) Public Service District Mitigation Actions

Emergency Water Supply Interconnection to Martis Valley

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not moved forward due to funding.

Truckee River Siphon

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project was successfully completed in 2019. The project greatly reduced the risk of a sewer overflow into the Truckee River due to having redundant sewer lines.

Squaw Creek Siphon

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not moved forward due to funding.

Easement Abatement/Maintenance of Emergency Access

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project is ongoing. Project has improved access to multiple assets in easement areas. Project work continues.

Develop a Community-Wide Emergency Notification System Capable of Providing Information to Both Residents and Visitors by Utilizing Permanent, Roadside Changeable Message Boards and a Low-Power Radio Transmitter

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not moved forward due to funding.

SVPSD/Mutual Water Company Inter-tie

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not moved forward due to funding.

Water Tank Earthquake Retrofit Project

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project has not moved forward due to funding.

Tahoe City Public Utility District Mitigation Actions

Bunker Water Tank Replacement

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Bunker Water Tank Replacement project was completed in 2019. The capacity of the tank was increased from 500,000 gallons to 1.2 million gallons providing much needed emergency storage and reduces risk by providing longer sustained fire flow capacity for areas served by the tank. In addition, the existing tank was constructed of redwood and was seismically unstable. The new tank is constructed of steel and meets all current seismic codes, further reducing wildfire and earthquake risks.

West Lake Tahoe Regional Water Treatment Plant

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Design is complete, and the project is currently out to public bid as of February 16, 2021. Award of construction is scheduled for April 2021 and project completion is scheduled for early 2024. When complete the plant will be provide approximately 1 million gallons per day of drought resilient and reliable water supply to the West Shore communities of Lake Tahoe.

Tahoe Main Emergency Water Supply

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Project currently stands at 50% design. Due to other priorities this project has been delayed and pushed out to 2024-2025 timeframe.

Tahoe Truckee Unified School District Mitigation Actions

North Tahoe High School and Middle School, Tahoe Lake Elementary School Emergency Generators.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Tahoe Truckee Unified School District is not a participant in this Plan Update. These actions were not tracked, so it is assumed they were not started. These will not be carried forward in this Plan Update.

School Site and Community Education of Procedures Related to Safety and Emergency Situations. Improvement of District Wide Emergency Communication and Alert Systems.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Tahoe Truckee Unified School District is not a participant in this Plan Update. These actions were not tracked, so it is assumed they were not started. These will not be carried forward in this Plan Update.

HVAC Control Upgrades

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Tahoe Truckee Unified School District is not a participant in this Plan Update. These actions were not tracked, so it is assumed they were not started. These will not be carried forward in this Plan Update.

Truckee Fire Protection District Mitigation Actions

Community Wildfire Protection Plan

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Truckee Fire facilitated the CWPP with land managers, stakeholders and the community identifying over 3,000 acres of WUI that needed fuel reduction work. The plan was complete in 2017 and work has been ongoing to reduce wildfire fuels in the identified areas. The District was able to secure two significant grants totaling almost 3 million dollars to treat key areas. The area has not experienced a significant wildfire in areas where the work has been completed. CWPP is planned to be updated in 2022.

Severe Winter Weather and Propane Issues Mainly in Serene Lakes

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Truckee Fire continues to work with the HOA, PC Building Department, propane companies and homeowners to identify and recommend improvements to residential systems. During significant snow events the District conducts public outreach as well as coordination with PC OES to prepare for a possible response. There have been no significant areawide leaks since 2010/11 winter.